Health Care Financing

Status Report

Research and Demonstrations in Health Care Financing

Fiscal Year 1989 Edition

U.S. Department of Human Services
Health Care Financing Administration
Office of Research and Demonstrations

Health Care Financing

Status Report

The Office of Research and Demonstrations (ORD), Health Care Financing Administration (HCFA), directs more than 300 research, evaluation, and demonstration projects. A central focus is on program expenditures as they relate to payment, coverage, eligibility, and management alternatives under Medicare and Medicaid. Study activity also examines program impact on benenficiary health status, access to services, utilization, and out-of-pocket expenditures. The behavior and economics of health care providers and the overall health care industry are also topics of investigation.

These activities are carried out by three major components—the Office of Research, the Office of Demonstrations and Evaluations, and the Office of Operations Support. The Office of Research conducts and supports data collection efforts and research on health care providers, payment approaches, beneficiary behavior, and health care utilization. The Office of Demonstrations and Evaluations funds, manages, and evaluates pilot programs that test new ways of delivering and financing Medicare and Medicaid services. The Office of Operations Support provides ORD-wide administrative direction for its research, demonstration, and evaluation projects, which includes the budget and accounting operations; grants, cooperative agreements, and contracts-award process; and publications and information resources program.

This report provides basic information on active intramural and extramural projects in a brief format. These projects are used to assess new methods and approaches for providing quality health care while containing costs, and they often provide the basis for making critical policy decisions on health care financing issues.

Projects are arranged according to ORD budget priority areas and subject categories. The synopsis on each project includes the title, project number, project period, name and address of awardee, contractor, or grantee organization, Federal project officer with primary responsibility for the project, a brief description, and the status of the project as of September 30, 1989. When a project involves research and development funds, the total funding amount for the life of the project is included. Remaining extramural projects are being conducted with waivers that permit innovations to financing and delivery of health services under the Medicare and Medicaid programs.

This is the tenth edition of the *Status Report*. Updated editions are produced on an annual basis. The information presented should be of use to policy officials, health planners, and researchers in examining the range of research and demonstration activities that are undertaken by ORD and the implications of results and findings.

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U.S. Department of Health and Human Services
Health Care Financing Administration
Office of Research and Demonstrations
Baltimore, Maryland 21207

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Publications and Information Resources
Gerri Michael-Dyer, *Chief*
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Requests to be placed on our mailing list to receive notification of future publications as they become available should be sent to: Health Care Financing Administration, Office of Research and Demonstrations, Publications and Information Resources, Room 1-A-9 Oak Meadows Building, 6325 Security Boulevard, Baltimore, Maryland 21207.

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Notice to readers:

On December 13, 1989, the President signed the Bill enacting the Medicare Catastrophic Coverage Repeal Act of 1989 (Public Law 101-234). As a result, it may be necessary for the Health Care Financing Administration to discontinue implementation of those projects listed in this report that were mandated under provisions of the Medicare Catastrophic Coverage Act of 1988 (Public Law 100-360).

Quality of Care

Hospital Care

Nonintrusive Outcome Measures: Identification and Validation

Project No.: 17-C-98684/9
Period: September 1984-June 1989
Funding: $ 1,006,109
Award: Cooperative Agreement
Awardee: The RAND Corporation
1700 Main Street
Santa Monica, Calif. 90406
Project Officer: Harry L. Savitt
Division of Beneficiary Studies

Description: The main objective of this project is to develop nonintrusive measures (administrative data) to determine the impact of selected changes in the health care sector, particularly prospective payment and diagnosis-related group methodology, on the quality of medical care. Another objective is to identify short-stay hospital care that may be less than adequate. In addition, medical conditions that appear to be associated with lower levels of care will be identified. A set of nonintrusive outcome indicators for quality care review is proposed. Two conditions are being examined: acute myocardial infarction and congestive heart failure.

Status: Disease-specific, identified medical records have been collected and abstracted. Data entry and analysis are completed. A final report was received and is currently being reviewed.

Develop Indexes of Hospital Efficiency and Quality

Project No.: 18-C-98841/5-01
Period: September 1985-December 1987
Funding: $ 227,097
Award: Cooperative Agreement
Awardee: Commission on Professional and Hospital Activities
1968 Green Road
P.O. Box 1809
Ann Arbor, Mich. 48106
Project Officer: Lawrence E. Kucken
Division of Beneficiary Studies

Description: This study is designed to produce quality and efficiency indexes by using existing data bases from the Commission on Professional and Hospital Activities, the American Hospital Association, and the Medicare provider analysis and review (MEDPAR) file, maintained by the Health Care Financing Administration. These indexes will provide the basis for monitoring simultaneous changes in efficiency and quality and for measuring efficiency/quality tradeoffs within hospitals.

Status: A final report has been submitted to the Health Care Financing Administration.

Hospital, Market, and Peer Review Organization Factors Affecting Unnecessary Utilization and Quality of Care

Project No.: 500-88-0035
Period: September 1989-August 1990
Funding: $ 148,349
Award: Contract
Contractor: Abt Associates, Inc.
55 Wheeler Street
Cambridge, Mass. 02138
Project Officer: Paul W. Eggers
Division of Beneficiary Studies

Description: This project is congressionally mandated by the Social Security Amendments of 1983 (Public Law 98-21). The goal of this study is to evaluate the effects of hospital, market, and peer review organization (PRO) characteristics on unnecessary utilization and quality of care. The study will specifically address four research questions:

- How have levels of unnecessary utilization and poor quality of care changed since the implementation of the prospective payment system (PPS)?
- What hospital and market characteristics are associated with the greatest utilization and quality problems?
- What is the relationship between hospital financial vulnerability to PPS and rates of unnecessary utilization and quality of care problems?
- How has PRO behavior—in terms of the stringency of their denials—affected utilization rates and quality problems?

Analyses will be conducted using data bases constructed from the SuperPRO data base (N = 120,000 records), linked with Medicare provider analysis and review (MEDPAR) records to obtain charge information and the Health Care Financing Administration's hospital cost reports to obtain hospital characteristics and financial vulnerability to PPS.

Status: The project is in the file construction phase.

Impact of the Prospective Payment System on the Quality of Inpatient Care

Project No.: 15-C-98663/5-01
Period: September 1985-January 1989
Funding: $ 275,689
Award: Cooperative Agreement
Awardee: Commission on Professional and Hospital Activities
1968 Green Road
P.O. Box 1809
Ann Arbor, Mich. 48106
Project Officer: Lawrence E. Kucken
Division of Beneficiary Studies

Description: This project is congressionally mandated by the Social Security Amendments of 1983 (Public Law 98-21). It will evaluate the effect of the Medicare hospital prospective payment system on the quality of inpatient care received by Medicare patients by

examining several indicators of hospital performance. This examination is based on data from the Professional Activity Study maintained by the Commission on Professional and Hospital Activity (CPHA), and supplemented by data from several other sources maintained by CPHA.

Status: The first and second year's project reports have been completed. A final project report has been submitted to the Health Care Financing Administration.

Impact of the Diagnosis-Related-Group-Based Prospective Payment System on Quality of Care for Hospitalized Medicare Patients

Project No.: 18-C-98853/9-03
Period: September 1985-December 1989
Funding: $ 3,710,403
Award: Cooperative Agreement
Awardee: The RAND Corporation
1700 Main Street
Santa Monica, Calif. 90406
Project Officer: Harry L. Savitt
Division of Beneficiary Studies

Description: This study will evaluate the impact of the prospective payment system on quality of care. It will assess potential effects of changes in inpatient hospital treatment patterns by examination of medical records and resultant health status outcomes. Quality measurement scores will be constructed for six medical conditions, before and after the introduction of prospective payment, taking into account:

- The nature, timing, and effects of medical procedures rendered.
- Disease severity.
- Comorbid conditions.

The effectiveness of medical care treatment will be evaluated by relating quality scores to mortality, readmission rates, and other outcome variables.

Status: During the first year, study areas and the number of data collectors to be assigned to each area for each of the five States (Texas, Pennsylvania, California, Florida, and Indiana) in the study were determined; worksheets for all hospitals eligible for study in the five States were established; six disease categories (hip fracture, myocardial infarction, congestive heart failure, pneumonia, cerebrovascular accident, and depression) and their corresponding *International Classifications of Diseases, 9th Revision, Clinical Modification* codes were identified; six expert physician panels were convened to establish quality of care criteria for the six study diseases; and individualized project summary packages were developed and sent to each of the five participating peer review organizations. During the second year, activities centered around data abstraction, instrument development, data collector recruiting and training, and data collection. During the third year, data collection was begun. Data collection and analysis were completed during the fourth year. A final report is expected in early 1990.

Analysis of Hospital Aftercare Under Prospective Payment

Project No.: 500-86-0017
Period: April 1986-October 1989
Funding: $ 1,436,268
Award: Contract
Contractor: System Sciences, Inc.
4330 East-West Highway
Bethesda, Md. 20814
Project Officer: Lawrence E. Kucken
Division of Beneficiary Studies

Description: The purpose of this pilot study is to develop and field test methods for determining the appropriateness of post-discharge aftercare services. Study methods will involve classifying patients at the time of their discharge from the hospital according to their post-discharge service needs and applying professionally developed guidelines to project aftercare needs. Projected needs will then be compared with services received based on interview data.

Status: The project methodologies and instrumentation have been completed and field tested. The final report has been submitted.

Changes in Post-Hospital Services Use by Medicare Beneficiaries

Project No.: 500-85-0015
Period: August 1986-June 1988
Funding: $ 301,500
Award: Contract
Contractor: Abt Associates, Inc.
55 Wheeler Street
Cambridge, Mass. 02138
Project Officer: Paul W. Eggers
Division of Beneficiary Studies

Description: This project was congressionally mandated under the Social Security Amendments of 1983 (Public Law 98-21). The purpose of this project is to:

- Determine the extent to which use of Medicare covered post-hospital services has changed since implementation of the prospective payment system (PPS), including home health agency, skilled nursing facility, and physician care.
- Measure changes in the severity of patients at admission and discharge from the pre-PPS to the post-PPS period.

Status: A number of reports have been prepared and are available from Abt Associates, Inc.

- Noether, M.: "Changes in Patient Severity and Hospital Utilization Measured with MEDISGRPS (medical illness severity grouping system)." Aug. 24, 1988.
- Gaumer, G.L., and Fama, T.A.: "Episodes of Hospitalization and PPS." Sept. 1, 1988.
- Noether, M.: "Readmissions and Transfers: The Effects of PPS." Sept. 7, 1988.

- Gianfrancesco, F.: "PPS and Geographical Effects on the Utilization of Post-Hospital Care." Aug. 31, 1988.

Findings from this study indicate:

- There is some evidence that the severity of illness of patients at discharge is greater in the post-PPS period compared with the pre-PPS period. However, patients are also more severely ill at admission as well.
- Use of Medicare-covered home health services is greater in the post-PPS period compared with the pre-PPS period, continuing the trend toward increased home health use.
- Use of Medicare-covered skilled nursing facilities is greater in the post-PPS period compared with the pre-PPS period, reversing the trend toward decreased skilled nursing facility use.

The results have been incorporated into the 1987 Annual Report to Congress on the *Impact of the Medicare Hospital Prospective Payment System.*

Trends in Patterns of Post-Hospital Service Use and Their Impact on Outcomes

Project No.: 17-C-99009/4-01
Period: June 1987-May 1990
Funding: $ 293,922
Award: Cooperative Agreement
Awardee: Duke University
Demographic Studies
2117 Campus Drive
Durham, N.C. 27706
Project Officer: Lawrence E. Kucken
Division of Beneficiary Studies

Description: This project will examine the pattern of care delivered after hospitalization for different types of hospitalized patients, as distinguished by diagnosis, age, sex, and other data elements contained on the Medicare Part A bill. Post-hospital use patterns will be examined in terms of types and duration of Medicare services received and the proportion of patients receiving care. Similar patterns will be examined for nonhospitalized Medicare beneficiaries.

Status: The focus of the project thus far has been on expanding and cleaning data files used in previous analyses.

Development of Methodologies for Technical Assessment and Quality Assurance Based on the Medicare Claims Data System

Project No.: 17-C-99296/1-01
Period: September 1988-August 1991
Funding: $ 125,000
Award: Cooperative Agreement
Awardee: Dartmouth College
Dartmouth Medical School
P.O. Box 7
Hanover, N.H. 03756
Project Officer: Marshall McBean
Division of Beneficiary Studies

Description: Medicare claims data will be used to identify patients who underwent coronary angiography in one of three New England hospitals from 1984 to 1986. Claims data on those Medicare beneficiaries 65 years of age or over who are diagnosed as having unstable angina will be supplemented with information abstracted from the medical records before and after surgery. A data collection instrument will then be created and tested to collect information from their medical records. Patient data and information derived from the literature will be used to describe patient differences among the three hospitals. It will be presented to a cardiovascular-outcomes study group to develop hypotheses that can be tested, assess the reliability and validity of the available data, and refine the criteria for entry into the study. The project will allow the Health Care Financing Administration to pursue research methodologies that should be used in studies relating to effectiveness of medical and surgical interventions in the Medicare population and would help validate the utility of Medicare claims data in studies of this type.

Status: This project is in the early implementation phase.

Evaluating Outcomes of Hospital Care Using Claims Data

Project No.: IR-18-HS0545-01
Period: July 1987-June 1989
Funding: $ 500,000 from Health Care Financing Administration;
$ 900,000 from National Center for Health Services Research
Award: Grant
Grantee: Dartmouth Medical School
Hanover, N.H. 03756
Project Officer: Marshall McBean
Division of Beneficiary Studies

Description: This is a study of the use of claims data for evaluation of outcomes associated with surgical procedures and medical admissions. The project will extend previous research both in breadth (to a wider range of procedures and admissions) and in depth (to validate and interpret previous findings by comparison of claims data with medical records). Using data from Medicare and from the Manitoba Health Commission, the project will proceed in two phases: the first to test the hypotheses about the relationship between therapy and outcome for a subset of conditions and procedures, and the second to validate outcomes for alternative approaches to prostatectomy.

Status: Health Care Financing Administration enrollment and utilization data for the years 1984-87 for six New England States plus four others has been accumulated. Software has been developed to link records pertaining to the same individuals to create sequential records. The initial file created was for patients who underwent prostatectomy. Files have subsequently been created for abdominal vascular surgery and hip fracture, and analysis of the outcomes

of these procedures has begun. Five other procedures (heart valve replacement, coronary artery bypass graft, angioplasty, peripheral vascular surgery, and endarterectomy) and two medical admissions (stroke and chronic obstructive pulmonary disease) will also be studied. Analysis of the long-term consequences of prostatectomy using data from Manitoba to adjust for patient severity at the time of surgery is continuing. Measures of severity obtained from the Manitoba Cancer Registry and a severity score provided by anesthesiologists, as well as measures of comorbidity from the claims records, are being incorporated.

Patient-Classification Systems: An Evaluation of the State of the Art

Project No.: 17-C-99133/F-01
Period: July 1987-June 1989
Funding: $ 1,602,544
Award: Cooperative Agreement
Awardee: Queen's University
Kingston, Ontario Canada K6L 3N6
Project Officer: Harry L. Savitt
Division of Beneficiary Studies

Description: This project is comparing the predictive power, for costs and mortality, of several patient-classification systems. It studies computerized severity index (CSI), acute physiology and chronic health evaluation (APACHE) II, medical illness severity grouping system (MEDISGRPS), patient management categories (PMCs), coded staging, and clinical staging. The study will abstract data from a nationally representative sample of approximately 15,000 medical records, and the classification systems will be compared individually and in various combinations. The next phase of the project will study the utility of patient-classification systems in quality of care monitoring.

Status: The project is using 7,050 Medicare cases collected for the Diagnosis-Related Group Validation Study of the Department of Health and Human Services' Office of the Inspector General (OIG) in a pilot study. It has developed microcomputer software to allow direct entry of medical record data. Abstraction of data from the OIG records is nearing completion. The project then undertakes analysis file construction, data analysis, validity studies, and reliability studies. It is simultaneously developing a larger, more representative sample from 1985 Medicare statistical files. Six peer review organizations will collect data on the sample using the project's microcomputer software. The quality of care portion of the study will involve 4,000 records from the fiscal year 1988 Medicare provider analysis and review (MEDPAR) file. A generic and a condition-specific quality review instrument have been developed. A pilot test of the generic quality review instrument has been completed. A report is expected mid-1990.

Strategies for Assessing and Assuring Quality of Care in the Medicare Program

Project No.: 17-C-99170/3-01
Period: September 1987-December 1989
Funding: $ 1,757,000
Award: Cooperative Agreement
Awardee: National Academy of Sciences
Institute of Medicine
2101 Constitution Avenue, NW.
Washington, D.C. 20418
Project Officer: Harry L. Savitt
Division of Beneficiary Studies

Description: The Institute of Medicine is conducting a 2-year study to design a strategy for assessing and insuring the quality of care in the Medicare program in accordance with Section 9313 of the Omnibus Budget Reconciliation Act of 1986 (Public Law 99-509). The main purpose of the study is to develop, within a committee of experts, a recommended strategy for quality review and assurance for Medicare beneficiaries.

Status: Eight committee meetings and two technical advisory panel meetings were held. Six background papers have been commissioned and completed. Other staff and commissioned papers were prepared. Eight focus groups of elderly persons were held in four sites. Similar focus groups with physicians were also held. Two public hearings, one in San Francisco and the other in Washington, D.C., took place. Ten site visits to health care organizations conducting quality review were made. A congressional briefing for key staff members was held in July 1989. Other presentations about the study were made to the American Medical Peer Review Association, American Medical Association, the Joint Commission on Accreditation of Health Care Organizations, the Department of Health and Human Services' Office of the Inspector General, and the Prospective Payment Assessment Commission. A final Report to Congress is expected in March 1990.

An Automated Data-Driven Case-Mix Adjustment System for Studies of Quality of Care

Project No.: 18-C-99069/9-01
Period: June 1987-June 1990
Funding: $ 526,948
Award: Cooperative Agreement
Awardee: University of California at San Francisco
3333 California Street, Suite 11
San Francisco, Calif. 94143
Project Officer: James D. Lubitz
Division of Beneficiary Studies

Description: The project will investigate whether predictors of patient outcome for use as control variables in studies of quality of care can be developed from readily available laboratory test information. In addition, the project will develop predictors of the outcomes of hospital care using laboratory test results that are available in computerized form at many hospitals. The outcome variable will be mortality after hospitalization. After the models are developed, they will be compared with models using variables obtainable only by labor-intensive review of medical records. Data for the project will come from the University of

California at San Francisco and Stanford Hospitals covering the period from 1985 to 1987.

Status: Laboratory and hospital discharge data for part of the study period have been obtained and processed. Preliminary analyses have confirmed the investigators' view that the main analytic tool should be classification and regression trees. A paper has been prepared showing that laboratory data combined with diagnosis-related group (DRG) is a better predictor of resource use than DRGs alone.

Using Case-Mix Systems to Measure Quality of Care

Project No.: 99-C-98526/1-05
Period: August 1988-July 1989
Funding: $ 125,297
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: Harry L. Savitt
Division of Beneficiary Studies

Description: This project involves two separate activities:

- Using the hospital mid-stay medical illness severity grouping system (MEDISGRPS) review scores to examine the ability of MEDISGRPS to predict hospital resource use (charges and length of stay) and mortality.
- Examining the relationship between severity scores produced through the computerized severity index (CSI), costs of hospital admissions, and in-hospital deaths.

Status: Findings from the study include the following:

- For those patients with a MEDISGRPS mid-stay review, the higher the mid-stay review score, the higher the average charges.
- The higher the MEDISGRPS mid-stay review score, the higher the length of stay.
- Almost all of the patients with admission MEDISGRPS scores of four who do not receive a mid-stay review die. The vast majority of those with admission scores of three who do not receive a mid-stay review also die.
- CSI defines severity as the treatment difficulty presented to physicians from the extent and interactions of a patient's diseases.
- CSI severity is a diagnosis-specific construct.

Two reports have been completed under this project and are expected to be available from the National Technical Information Service in early 1990:

- "A Description and Clinical Assessment of the Computerized Severity Index."
- "Admission and Mid-Stay MEDISGRPS Scores as Predictors of Hospital Charges and 30-Day Mortality."

Outcome Measures for Assessment of Hospital Care

Project No.: 99-C-99169/5-02
Period: September 1988-December 1989
Funding: $ 70,134
Award: Cooperative Agreement
Awardee: University of Minnesota Research Center
(See page 79)
Task Leader: Paul W. Eggers
Division of Beneficiary Studies

Description: Under this project, the awardee will advise the Health Care Financing Administration on the most fruitful directions to follow in conducting future research on outcome measures for hospital care. Potential outcome measures, other than mortality and rehospitalization, will be explored. The analysis will focus on three conditions: acute myocardial infarction (AMI), hip fracture, and breast cancer.

Status: An in-depth literature review of clinical indicators has been conducted. A meeting of clinical experts was held on September 25, 1989, to obtain recommendations for future research. The expert panel made the following general recommendations:

- Additional outcome measures should not be a high priority.
- A greater need is for better quality diagnostic data on the Uniform Hospital Discharge Data Set (UHDDS).
- Another high priority should be on the further development of severity measures.
- It is highly unlikely that a generic functional status indicator can be developed which will serve the needs of such disparate diagnoses as AMI, hip fracture, and breast cancer.

A final report has been received and is being reviewed.

Prospective Payment Beneficiary Impact Study

Funding: Intramural
Project Director: Paul W. Eggers
Division of Beneficiary Studies

Description: The purpose of this study is to measure changes in hospitalization as a result of prospective payment that may impact on Medicare beneficiaries.

Status: Baseline data analyses have been performed and are included in the 1984 Annual Report to Congress on the *Impact of the Medicare Hospital Prospective Payment System*, mandated by Public Law 98-21. First-, second-, and third-year implementation data (fiscal years 1984, 1985, and 1986) have been analyzed and are included in the 1985, 1986, and 1987 Annual Reports to Congress. Further analyses will be included in subsequent Reports to Congress. Findings from the study are:

- In 1984, discharges per 1,000 persons declined (by 4.1 percent) for the first time since the beginning of Medicare. In 1985, the U.S. discharge rate declined to 330 per 1,000, a further decrease of 10.2 percent. This downward trend continued in 1986 with an additional 6.2 percent decline to 318 per 1,000. Since 1983, the net decline in discharges per 1,000 has been 19.2 percent.

- In 1984, average length of stay declined by 0.9 days, or 8.8 percent. Length of stay continued to decline in 1985, but at a greatly diminished rate, falling from 8.7 days to 8.4 days, a decrease of 3.9 percent. However, length of stay seems to have plateaued, remaining at 8.4 days in 1986. Since the beginning of the prospective payment system, the total decline in length of stay has been 12.0 percent.
- In 1984, the combination of a large decline in length of stay and the first-ever decline in discharges resulted in a 12.6 percent decline in the days-of-care rate. The decrease in the days-of-care rate was somewhat larger in 1985 (13.7 percent). Although days of care continued to decline in 1986, the rate of decrease (5.9 percent) was less than one-half as great as in the previous 2 years. Still, the net impact has been significant. The days-of-care rate for Medicare aged beneficiaries was 29 percent lower in 1986 than in 1983.
- Decreases in inpatient utilization were relatively consistent across age, sex, and race groups.

A National Program to Improve the Quality of Intensive Care Unit Services

Project No.: 18-C-99054/3-01
Period: January 1988-December 1990
Funding: $ 770,000 (HCFA funding)
Award: Cooperative Agreement
Awardee: George Washington University
Office of Sponsored Research
Rice Hall, 6th Floor
Washington, D.C. 20052
Project Officer: Alma B. McMillan
Division of Beneficiary Studies

Description: The project is jointly funded by the National Center for Health Services Research and Health Care Technology Assessment, The John A. Hartford Foundation, the Health Care Financing Administration, and Acute Physiology and Chronic Health Evaluation (APACHE) Systems, Inc. (a new private corporation recently formed in part to support this research effort and to promote the distribution of APACHE-related research). The study will determine whether quality of communication and coordination among intensive care unit (ICU) nurses and physicians is a factor that can be correlated with the ICU average severity-adjusted death rate. A long-term goal is to develop managerial and organizational guidelines that can be used to improve ICU quality of care. A random sample of approximately 16,000 medical records of ICU patients will be sampled for the years 1988 and 1989 from about 40 hospitals. These records will be linked with Medicare administrative data for the calculation of 30-day post-ICU admission mortality rates. In addition to APACHE II scores, the project will collect information on organization characteristics of the hospital, including measures of ICU effectiveness, communication and coordination within the unit, and conflict resolution. These measures will then be tested for impact on APACHE severity-adjusted outcomes.

Status: Using data collected from four Chicago-area hospitals, the ICU nurse and physician questionnaires were shown to be reliable and valid. Where measures were not as strong as desired, appropriate revisions were made. In addition, separate instruments have been developed for nurses and physicians to further increase the validity of the questionnaires. The final versions of both the chief executive officer and ICU structure and background questionnaires have been produced and all of the questionnaires have been distributed to the study hospitals. Data files have been completed for 20 of the 43 ICUs; structure and background questionnaires have been returned by 34. Data collection is still in progress.

Interpreting Hospital Mortality Data: How Much Can Patient Severity and Quality of Care Explain?

Project No.: 99-C-98489/9-06
Period: August 1989-July 1990
Funding: $ 99,393
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center
(See page 77)
Task Leader: James C. Beebe
Division of Beneficiary Studies

Description: Under this project, RAND will perform four tasks relating to the Medicare Mortality Predictor System (MPS):

- Investigate the statistical properties of and develop a theoretically defensible standard error estimator for the MPS rate estimator.
- Develop a Baysian estimator for hospital mortality rates.
- Further investigate the sample design used to estimate the MPS risk-adjustment equations.
- Estimate how much of the variance in hospital mortality rates is attributable to variation in severity versus variation in quality of care.

Status: The study is in the early developmental stage.

Evaluating Quality of Care for Hospitalized Patients

Project No.: 99-C-98526/1-06
Period: August 1989-July 1990
Funding: $ 100,000
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: Gerald F. Riley
Division of Beneficiary Studies

Description: The Health Care Financing Administration (HCFA) has recently convened expert panels to identify important adverse outcomes for eight common surgical procedures. Included as adverse outcomes are events such as hospital readmissions, infectious complications after surgery, and general complications. Although HCFA plans to compare adverse outcomes for these surgical conditions, they have not adjusted for severity of illness at admission. This project will build on Boston University's experience at its Health Care Research Unit

in developing severity of illness models. Equation-based severity models will be developed using common clinical information abstracted from charts on hospitalization to predict adverse surgical outcomes such as readmission, common surgical complications (including unplanned return to surgery), and evidence of a post-surgery myocardial infarction. This work will further HCFA's ability to compare the quality of surgical cases using outcomes more sensitive than mortality with adequate severity of illness adjustments.

Status: The project is in the early developmental stage. A panel of surgical consultants was convened to develop a consensus on the useful measures of operative complications and morbidity.

Evaluating Quality of Care for Surgical Patients: Using Diagnosis-Related Group and Quality of Care Data for Research on Hip Patients

Project No.: 99-C-98489/9-06
Period: October 1989-September 1990
Funding: $ 79,975
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center
(See page 77)
Task Leader: Gerald F. Riley
Division of Beneficiary Studies

Description: The Health Care Financing Administration is developing a way to use data from the Medicare provider analysis and review (MEDPAR) files to study adverse outcomes for 8 major surgical procedures, 2 of which involve treatment of broken hips. Medical record abstracts for 2,853 hip fracture patients will be examined and compared with their MEDPAR records. The investigators will determine which characteristics present at the time of hospital admission are associated with adverse patient outcomes and the extent to which adverse outcomes are related to poor processes of care.

Status: The study is in the early analysis phase.

Long-Term Care

Improving New York State's Nursing Home Quality Assurance Program

Project No.: 11-P-97590/2-05
Period: September 1980-December 1988
Award: Grant
Grantee: State of New York Department of Social Services
Tower Building Empire State Plaza
Albany, N.Y. 12237
Project Officer: Elizabeth S. Cornelius
Division of Long-Term Care Experimentation

Description: This project tests the simplification of federally mandated periodic medical review/independent professional review processes in nursing homes and combines the process with the annual facility survey. Surveyors use 11 sentinel health events, such as accidents, decubitus ulcers, and medication regimen to determine if nursing home patients are receiving quality care. Facilities found to have fewer than the average problems in these areas receive a less-than-full facility survey. This combined medical review and survey method reduces surveyors' time and allows State personnel to focus on facilities and patients with major problems.

Status: The project has been completed. The new inspection of care processes are fully operational. The State indicates that the new system provides documentation to allow them to take positive corrective actions against nursing homes found to be in noncompliance. Of the 80 adverse actions taken by the State in 1985 and 1986, only 7 resulted in administrative hearings. During this period, the State assessed $559,000 in penalties and was successful in collecting $334,000. In addition, there were 15 referrals to the Health Care Financing Administration Regional Office for intermediate sanctions. The waivers have been continued while the State develops a new computer-assisted quality assurance process. The independent evaluator submitted a final report entitled, "Evaluation of the Three State Demonstrations in Nursing Home Quality Assurance Processes" in Fall 1985. The report is available from the National Technical Information Service, accession number PB86-215985. The substantive findings were:

- The average severity of deficiencies was higher under the new method than under the old method.
- Most of the deficiencies found by the evaluator's validation team were also found by the State surveyors. However, with respect to correction, the State surveyors reported almost all cited deficiencies corrected at followup, while the validation team found two-thirds of the cited violations were corrected.
- There was a significant relationship between the number of deficiencies detected by State surveyors and an independent, nondeficiency-based quality of care measure, the quality assessment index (QAI). The relationship between the severity of deficiencies detected by State surveyors and QAI score was somewhat greater than that for quantity of deficiencies.
- The results suggest that there was a decline in total surveyor time spent on nursing home quality assurance.

New York State Integrated Quality Assurance System for Residential Health Care Facilities: The Next Step After Case-Mix Reimbursement

Project No.: 11-C-98925/2-01
Period: August 1986-January 1990
Funding: $ 597,695
Award: Cooperative Agreement
Awardee: New York State Department of Social Services
40 North Pearl Street
Albany, N.Y. 12243

Project Officer: Marvin A. Feuerberg
Division of Long-Term Care Experimentation

Description: The objectives of the New York State Quality Assurance System (NYQAS) are to link data from the case-mix reimbursement system for use in the quality assurance system and to integrate the quality assurance processes of survey/certification, inspection of care, and utilization review. The State recently implemented a case-mix payment system for residential health care facilities for which all patients are assessed at least biannually. The resulting data on patient characteristics are audited and entered on a client-specific data base that can be utilized to target quality assurance activities toward facilities that:

- Have staffing patterns that seem inappropriate to the needs of patients.
- Have excessive numbers of patients with clinical outcomes that indicate possible deficiencies in the quality of care.
- Have unexpected negative outcomes from one review to the next.

External outcome standards, survey and certification, inspection of care, and utilization review activities will be integrated into a single, patient-centered process. The use of the case-mix data base will serve to focus reviewer energies on problem facilities. The ability to routinely track significant or potentially significant deteriorations in patient care will trigger off-cycle surveys. Facilities identified as having few or no problems will be targeted for abbreviated surveys.

Status: During the first and second year of the project, the State completed the NYQAS design. The State also designed a training program for State surveyors on the use of the new protocols and procedures. The training began in October 1988, and NYQAS was implemented in November 1988. Administrative waivers permit sampling of resident review (as opposed to a 100-percent review), a survey cycle which averages 12 months (as opposed to 12 months for all homes), and the alignment of utilization review with case-mix assessment intervals.

A Longitudinal Study of Case-Mix Outcomes and Resource Use in Nursing Homes

Project No.: 18-P-98717/1-03
Period: September 1985-November 1988
Funding: $ 722,135
Award: Grant
Grantee: Brown University
Box G
Providence, R.I. 02912
Project Officer: Elizabeth S. Cornelius
Division of Long-Term Care Experimentation

Description: This study of natural histories of patient outcomes was designed to analyze the variation in outcomes for nursing home residents and the relationship between case-mix adjusters and these outcomes. Using several large administrative data sets, the project focused on quality-based outcome measures such as changes in physical function, discharge status, and changes in clinical conditions and the receipt of services. Data on residents from the National Health Corporation, New York State, and Texas facilities were used in these analyses.

Status: The study consisted of three major areas of analyses. The first set of analyses described probabilities of functional change and discharge locations for a cohort of residents newly admitted to the nursing home. Analyses of the changing risk of discharge dead, to home, and to the hospital over the first year of stay show that, early in the stay, a positive outcome is strongly related to the number of activities of daily living in which the resident is independent. The greater the number of dependencies, the less likely they are to leave. Three different data sets were then used to describe the relationship between case-mix adjusters and quality indicators. Outcomes examined include: several measures of physical functioning, decubitus ulcers, urinary tract infections, contractures, and the use of restraints. Some common patterns were identified. Changes in functional abilities were more consistently associated with age than with diagnosis. The final phase of analysis was a validation of three multivariate models that predict 6-month outcomes. The models predict functional improvement, functional decline, and death for a cross-section of nursing home residents. Each model was initially developed with data from Rhode Island, as part of a study funded by the National Center for Health Services Research. Using data from New York State and National Health Corporation nursing home residents, these three models were re-estimated. Overall, the majority of terms in the three models were related to the outcomes as found in the Rhode Island models. There was some variation in the magnitude and significance of the relationships. However, robust associations were found for parameters that were most consistently defined and those that were less dependent on variations in practice patterns. Functional status, as measured by eating and transfer activities of daily living, was the patient characteristic most consistently related to prevalence and incidence of decubitus ulcers, urinary tract infections, contractures, and restraint use.

Impact of the Prospective Payment System on the Quality of Long-Term Care in Nursing Homes and Home Health Agencies

Project No.: 17-C-98971/8-01
Period: August 1986-November 1989
Funding: $ 608,553 Phase I
$ 234,542 Phase II
Award: Cooperative Agreement
Awardee: University of Colorado
1355 South Colorado Boulevard, Suite 706
Denver, Colo. 80222

Project Officers: Marni J. Hall - Phase I
Phyllis A. Nagy - Phase II
Division of Long-Term Care Experimentation

Description: Phase I of this study examined patient-level process indicators of quality of care provided to skilled nursing facility (SNF) and home health patients before and after implementation of the Medicare inpatient hospital prospective payment system (PPS). It also assessed pre- and post-PPS differences in patient care practices and outcomes as reported by physicians and nurses, and the number and types of acute care beds recently converted to SNF beds (transition beds). This study was expanded in September 1988 (Phase II) to conduct research mandated by the Medicare Catastrophic Coverage Act of 1988 relating to the quality of long-term care services (in community-based and custodial settings), and the effects of the provision of long-term care services on the reduction of expenditures for acute health care services. Phase II includes the development of recommendations for additional research in these areas.

Status: Findings from Phase I were incorporated into a July 1987 report entitled, "Findings on Case Mix and Quality of Care in Nursing Homes and Home Health Agencies." This report is available from the National Technical Information Service, accession number PB88-100623. Analyses of the pre- and post-PPS time periods indicated that the level of quality of care provided prior to the implementation of PPS has generally been maintained. More detailed analyses have been undertaken relating to this issue, along with analyses of the transition bed data. A report on these two topics is expected in early 1990. Under Phase II, two reports have been prepared: "Future Research on the Quality of Long-Term Care Services in Community-Based and Custodial Settings," and "State Survey of Community-Based Care Systems." These reports are expected to be available from the National Technical Information Service by mid-1990. An additional report that addresses the need for further research on the relationship between long-term care services and acute-care expenditures is also expected.

Study of Long-Term Care Quality and Nursing Homes

Project No.: 18-C-98417/8-03
Period: September 1983-September 1986
Funding: $ 808,176
Award: Cooperative Agreement
Awardee: University of Colorado Health Sciences Center
4200 East 9th Avenue, C-421
Denver, Colo. 80262
Project Officer: Dennis M. Nugent
Division of Long-Term Care Experimentation

Description: The purpose of this evaluation of the Robert Wood Johnson Foundation's (RWJF) Teaching Nursing Home Program (TNHP) was to assess the impact of nursing school/nursing home affiliations on patient outcomes and costs of patient care. Eleven university-based schools of nursing were funded to establish clinical affiliations with one or two nursing homes. Objectives of the study included assessing the extent to which the TNHP approach reduces hospitalizations and emergency room use, examining whether the length of nursing home stays is reduced and discharges into independent living environments are increased, and determining the program's effect on the health status and functioning of the patient. In addition to utilization and patient impacts, a cost-benefit analysis was conducted. The evaluation of this program is sponsored jointly by the Health Care Financing Administration and RWJF. (RWJF is funding the evaluation from October 1986 to December 1988.) A supplement to the initial grant was funded in June 1986 to examine quality and process care in teaching nursing homes compared with that in comparison to nursing homes. This comparison of care studied seven problem areas: urinary incontinence and urinary catheter, pressure sores, terminal illness, confusion, falls, diabetes, and use of sedatives.

Status: Information about the individual teaching nursing home facilities was summarized in a programmatic report published in 1985. A draft report discussing outcome results, process quality results, and policy implications has been received and is being reviewed.

Development of Outcome-Based Quality Measures for Home Health Services

Project No.: 500-88-0054
Period: September 1988-December 1992
Funding: $ 1,965,389
Award: Contract
Contractor: Center for Health Policy Research
1355 S. Colorado Boulevard
Denver, Colo. 80222
Project Officer: Tony F. Hausner
Division of Long-Term Care Experimentation

Description: The purpose of this contract is to develop and test outcome-based measures or indicators of quality for Medicare home health services. The measures are to be reliable and valid for use in monitoring and comparing quality of home health care across agencies, recognizing possible confounding factors such as case mix. Colorado has developed a set of quality indicator groups that they hope to test in this study. The contractor will consider a broad range of possible outcome measures including health and functional status measures. They will test outcome measures that are linked to specific diagnostic conditions and/or services and broad-based measures that are not so linked. They will also test measures that are more precise in the information provided and others that are more practical and less costly to administer. The key criteria for the selection of measures include feasibility, reliability, validity, difficulty in "gaming" the measures, impact on

quality access, and cost/burden of data collection to the Health Care Financing Administration and home health agencies.

Status: The contract was awarded in September 1988. The contractor has completed literature reviews, a concept paper, a design report, and an Office of Management and Budget Reports Clearance package. Data collection is scheduled to start in early 1990. The Robert Wood Johnson Foundation (RWJF) has awarded a grant to the Center for Health Policy Research that complements this contract. The RWJF grant focuses on adult non-Medicare home care services and populations and uses clinical panels to identify quality measures.

Development, Pilot Testing, and Refinement of Valid Outcome Measures for the Home Care Setting

Project No.: 18-C-98868/0-02
Period: September 1985-August 1988
Funding: $ 201,143
Award: Cooperative Agreement
Awardee: Home Care Association of Washington
406 Main Street, Suite 116
Edmonds, Wash. 98020
Project Officer: Margaret A. Coopey
Division of Long-Term Care Experimentation

Description: Most efforts to evaluate home health care quality have focused on the home health agency (HHA) organizational structure or the process of care delivery but have neglected patient outcome measures as quality indicators. This project, sponsored by the Home Care Association of Washington (HCAW) and developed in conjunction with their Quality Assurance Committee, is designed to develop, pilot-test, and refine seven patient-centered outcome measurement scales to monitor and assess the quality of care delivered by HHA personnel. The scales are designed to monitor the quality of care within agencies rather than serve as measures to compare quality across HHAs. The project conducted pilot tests of each outcome scale in HCAW member agencies on 121-196 randomly selected home care patients.

Status: The project has been completed. The final report is available from the National Technical Information Service, accession number PB89-155352.

The Use of Medicaid Reimbursement Data in the Nursing Home Quality Assurance Process

Project No.: 18-C-99256/5-01
Period: June 1988-June 1989
Funding: $ 132,930
Award: Cooperative Agreement
Awardee: Center for Health Systems Research and Analysis
University of Wisconsin-Madison
Room 300 Infirmary
1300 University Avenue
Madison, Wis. 53706
Project Officer: Elizabeth S. Cornelius
Division of Long-Term Care Experimentation

Description: The purpose of this project is to assess the feasibility of using Medicaid reimbursement data to target facilities and residents in the nursing home quality assurance survey process. Medicaid reimbursement data appear to hold considerable promise in helping target facilities for more intensive review, identifying specific areas of deficient care, and identifying individual residents for more detailed review. Information on medication use, sentinel health events, and other indicators can be provided to surveyors in preparation for the field survey. The information can also be used to determine whether problems have recurred after the survey and followup visits. The objectives of the project are:

- To convert reimbursement data into specific quality of care indicators (QCIs), particularly with respect to drug-related measures and medical outcomes.
- To identify the conditions, standards, and elements in the Federal regulations for which the use of QCIs has the greatest potential benefit.
- To develop and demonstrate in one State (Wisconsin) the procedures for providing QCIs to survey staffs.
- To assess the potential for implementing the system in other States.
- To determine the implications of the proposed Health Care Financing Administration nursing home regulations and 1987 Omnibus Budget Reconciliation Act provisions for the use of reimbursement data in the quality assurance process.
- To design an expanded demonstration of the use of QCIs in the survey process.

Status: Fifteen preliminary QCIs have been developed and are currently being reviewed by the project staff and the advisory panel. The QCIs have been linked to specific conditions, standards, and elements within the existing Federal regulations, and proposed new regulations are being reviewed to determine their relationship with the QCIs. Deficiencies and QCIs in Wisconsin for the period August 1987 to 1988 are being analyzed to determine the baseline relationship between the two measures. Preliminary discussions have been held with survey staff to develop the system for conveying QCI information to the surveyors in a systematic way. Finally, a survey of State Medicaid reimbursement and quality assurance officials is being designed to identify which States may hold the greatest potential for the use of Medicaid data in the survey process.

Study of Home Health Care Quality and Cost Under Capitated and Fee-For-Service Payment Systems

Project No.: 17-C-99051/8-01
Period: June 1987-June 1992
Funding: $ 1,683,773
Award: Cooperative Agreement

Awardee: Center for Health Policy Research
1355 South Colorado Boulevard
Denver, Colo. 80222
Project Officer: Marni J. Hall
Division of Long-Term Care Experimentation

Description: This project is designed to compare the quality and cost of home health care provided under capitated and noncapitated payment systems for two groups of Medicare beneficiaries: clients admitted to home health care following a hospitalization, and those who have not been in a hospital for at least 30 days prior to the initiation of home care. Process and outcome quality measures are being developed and will be used with patient-level resource-use measures to assess cost effectiveness of care in the two settings.

Status: Recruitment of home health agencies for the data collection phase is under way, and data gathering is to begin mid-1990. Secondary data detailing Medicare utilization and costs are being analyzed.

Home Care Quality Studies

Project No.: 500-89-0056
Period: October 1989-March 1993
Funding: $ 2,642,445
Award: Contract
Contractor: University of Minnesota
School of Public Health
Box 197, 420 Delaware St., SE.
Minneapolis, Minn. 55455
Project Officer: Phyllis A. Nagy
Division of Long-Term Care Experimentation

Description: In response to the congressional mandate in Section 207(a)(4) and (5) of the Medicare Catastrophic Coverage Act of 1988 (Public Law 100-360), this study will carry out research in the following topics:

- The quality of long-term care services in community-based and custodial settings.
- The effectiveness of (and need for) State and Federal consumer protections that assure adequate access to and protect the rights of Medicare beneficiaries who are provided long-term care services (other than in a nursing facility).

The project will focus on in-home care, examining traditional home health services that are reimbursed by Medicare and Medicaid, as well as personal care and supportive services which have more recently been covered by Federal and State sources of funding. Key project tasks include:

- Development of a taxonomy clarifying the various objectives/goals ascribed to home and community-based care, from the various perspectives of consumers, payers, and care providers.
- Development and feasibility-testing of a survey design which would measure the extent of, need for, and adequacy of, home care services for the elderly.
- A study of variations in labor supply and related effect(s) on home care quality, as well as factors that contribute to these variations.
- Recommendations to improve the quality of home and community-based services by identifying "best practices" and promising quality assurance approaches.

Status: The project is in the early developmental phase.

Psychoactive Drug Use Among Nursing Home Elderly

Project No.: 99-C-99169/5-02
Period: September 1989-May 1990
Funding: $ 97,600
Award: Cooperative Agreement
Awardee: University of Minnesota Research Center
(See page 79)
Task Leader: Dana B. Burley
Division of Long-Term Care Experimentation

Description: This study will examine the extent of regular and "prn," or "as needed," psychoactive drug use among nursing home elderly and the possibility of appropriate and inappropriate use of such drugs in terms of characteristics of nursing home residents and nursing homes. Researchers will use existing, secondary-source data from two previous research studies for the analyses. The studies involve a retrospective review of records of individuals residing in nursing homes from 1980 to 1987.

Status: The project is in the early developmental stage.

Other Studies

Medicaid Quality of Care Study

Project No.: 500-88-0044
Period: June 1988-December 1991
Funding: $ 3,714,471
Award: Contract
Contractor: SysteMetrics Inc./McGraw Hill
104 West Anapamu Street
Santa Barbara, Calif. 93101
Project Officer: Thomas W. Reilly
Division of Program Studies

Description: Section 9432(c) of the Omnibus Budget Reconciliation Act of 1986 (Public Law 99-509) requires that the Department of Health and Human Services report to Congress on a study that examines the appropriateness, necessity, and effectiveness of selected medical treatments and surgical procedures for Medicaid patients. The study must analyze the extent of variation that exists in the rate of performance of these treatments and procedures on Medicaid beneficiaries for small areas within States and among States. The study must also identify underutilized, medically necessary treatments and procedures for which failure to furnish could have an adverse effect on health status, and the

rate of use by Medicaid beneficiaries is significantly less than the rate for comparable, age-adjusted populations. The Medicare Catastrophic Coverage Act of 1988 subsequently modified the mandate so that the study is being conducted in two phases. The first phase will include an analysis of geographic variation in utilization and an interim report is due to Congress in 1990. The second phase will deal with the remaining issues of appropriateness, necessity, and effectiveness. The final report is due to Congress on January 1, 1992.

Status: The analysis of the phase I variations results is nearing completion. Analysis plans for phase II are currently under way.

Option Paper on Collection of Health Status Information on Consecutive Cohorts of Medicare Beneficiaries

Project No.: 99-C-99168/3-02
Period: September 1988-March 1989
Funding: $ 115,609
Award: Cooperative Agreement
Awardee: Project Hope Research Center
(See page 79)
Task Leader: Marshall McBean
Division of Beneficiary Studies

Description: The purpose of this project is to explore the feasibility of collecting data on the health status of beneficiaries as they become entitled to Medicare at 65 years of age. The resulting data collection is known as the Medicare Beneficiary Health Status Registry (MBHSR). Researchers from this project will also study the feasibility of collecting data on changes in the health status of beneficiaries over time. Finally, they will assess the feasibility of undertaking a demonstration to evaluate the impact of health risk assessment on beneficiary health and Medicare use.

Status: An expert committee met to discuss Project Hope's suggestions for the actual content of the MBHSR as well as methods for collecting and using the information. Project Hope staff and consultants are designing prototype studies to demonstrate how the MBHSR data can be used to answer questions of effectiveness of Medicare programs or medical practice. Development of an MBHSR was strongly endorsed by the Institute of Medicine's panel designing research agendas for Medicare in the areas of breast cancer, hip fracture, and acute myocardial infarction.

Development of Ambulatory Surgery Quality of Care Measures and Monitoring Strategy

Project No.: 99-C-98526/1-06
Period: August 1988-July 1990
Funding: $ 40,000
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: Sheldon Weisgrau
Division of Hospital Experimentation

Description: The goal of this project is to produce a conceptual report addressing approaches for measuring the quality of ambulatory surgery. This research will provide the Health Care Financing Administration with information concerning options, strategies, and approaches in the development and use of ambulatory surgery quality of care indicators and the data needed to measure and monitor these criteria.

Status: A literature review and initial conceptual paper discussing various approaches and problems in the measurement of quality of care have been completed. A final report is expected in late 1990.

Physician and Ambulatory Care Payment Systems

Physician Utilization, Intensity, and Coding Issues

Volume and Intensity of Physician Services

Project No.: 99-C-99169/5-01
Period: April 1988-December 1988
Funding: $ 106,676
Award: Cooperative Agreement
Awardee: University of Minnesota Research Center
(See page 79)
Task Leader: Sherry A. Terrell
Division of Reimbursement and Economic Studies

Description: This project was mandated under Public Law 100-203, the Omnibus Budget Reconciliation Act of 1987. Concern about the volume and intensity of services provided by physicians has been stimulated primarily by the growth in spending on Medicare Part B services. The objectives of this study were to:

- Describe and analyze factors affecting the volume and intensity of physician services.
- Describe existing volume controls used by both public and private carriers.
- Consider the impact of a resource-based relative value scale (RBRVS) on the provision of physician services.

Status: The final report, "Issues Related to the Volume and Intensity of Physician Services," was received in December 1988. It addressed a variety of problems associated with controlling the volume and intensity of physician services. Using economic theory, empirical evidence, and behavior theory, seven feasible control methods were examined. These seven controls were: clinical guidelines with professional education, utilization review, copayment, capitation, expenditure caps, collapsed (payment) coding, and service bundling. Responses to such controls were evaluated from three physician behavioral perspectives—profit maximization, target income, and patient agency. The authors found that:

- Clinical guidelines, in and of themselves, would not be a strong volume control, but such guidelines are an important adjunct to utilization review, expenditure caps, capitation, and copayment reforms.
- Cost-effective utilization review should be an element of any volume control system, and revitalizing Part B copayment by discouraging medigap insurance would be important.
- All Medicare carriers and most private sector health insurance carriers operated utilization review programs. Medicare carriers operated vigorous post-payment review programs.
- Neither sector had bundled physician services or collapsed codes for payment purposes in innovative ways, although Medicare carriers were in the forefront of using global fee payment for surgery.
- It was impossible to predict with certainty the change (if any) in the total cost and volume of physician services under RBRVS.

The report is available from the National Technical Information Service, accession number PB89-151591.

Effectiveness of Medicare Carrier Volume and Intensity Controls

Project No.: 99-C-99169/5-01
Period: August 1988-January 1989
Funding: $ 44,919 (Bureau of Program Operations funded project)
Award: Cooperative Agreement
Awardee: University of Minnesota Research Center
(See page 79)
Task Leader: Sherry A. Terrell
Division of Reimbursement and Economic Studies

Description: This project supported a Report to Congress authorized under the Omnibus Budget Reconciliation Act of 1987 (Public Law 100-203). It was designed to study the effectiveness of pre- and post-payment review activities that are conducted by the Medicare Part B carriers. Researchers analyzed the effectiveness of methods used by these carriers in ensuring that payments are made only for medically necessary services.

Status: This project is complete and the final report was received in January 1989. The study focused on the effectiveness of 13 national (mandatory) prepayment medical review screens used by Medicare Part B carriers in 1986 and 1987. It was found that, for most carriers, most screens are likely to be somewhat effective in promoting desirable physician treatment or billing behavior, at least when the screens are initially imposed. This effectiveness was not conclusively demonstrated by the empirical portion of this study. As a result of site visits to innovative carriers and carrier survey data, it was concluded that Medicare carriers operate extensive pre-payment utilization review programs and vigorous post-payment review to ensure that payments are made only for medically necessary services. The final report is available from the National Technical Information Service, accession number PB89-238125.

Specialty Differentials Across Localities

Project No.: 99-C-98489/9-05
Period: May 1988-July 1989
Funding: $ 93,480
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center
(See page 77)
Task Leader: Benson L. Dutton
Division of Reimbursement and Economic Studies

Description: This study had two objectives. The first objective was to determine the presence and size of physician payment differentials between specialists and nonspecialists across Medicare pricing localities for a given set of procedures. This aspect also focused on the criteria carriers use in defining specialists. The second objective involved an analysis of the effect of physician payment rate differentials across localities on the volume of services provided by physicians. A special case study of payments to specialists and nonspecialists in Empire Blue Shield was also conducted.

Status: This project has been completed. The primary finding of this case study is that no uniform specialty differential ratio exists across procedures in the one identified carrier that requires board certification or board eligibility for a specialty differential payment. Further findings in this case study are that no systematic pattern of differentials exists across types of specialties, but that there appears to be a systematic difference in the specialty differential across localities. Two reports from RAND have been produced:

- "Relative Payments to Specialists and Nonspecialists under Medicare Part B: A Case Study" (WD-4226-HCFA).
- "Estimated Savings to Medicare of Eliminating Specialty Payments to Physicians Without Board Certification" (WD-4403-HCFA).

Multiple Hospital Visits

Project No.: 99-C-98489/9-06
Period: August 1988-December 1989
Funding: $ 61,440
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center
(See page 77)
Task Leader: Benson L. Dutton
Division of Reimbursement and Economic Studies

Description: This study is an examination of:

- The relationship of the number and intensity of physicians' hospital visits to the characteristics of the hospital stay.
- How the number and intensity of physicians' hospital visits relate to the characteristics of the physician (e.g., specialty, regional practice patterns, participation and assignment status, and attending status).

- Trends over time in intensity and frequency of hospital visits by carrier and within specialties.

Status: The analysis for this project consists of two parts. The first and most substantial part of the analysis is examining the determinants of the frequency and intensity of hospital visits. This part of the analysis is essentially complete. The second part of the analysis is examining individual physician hospital visit patterns by linking Part B Medicare annual provider data with the Medicare provider analysis and review file. A draft report setting forth the findings of this project is expected in Spring 1990.

Assistants at Surgery

Project No.: 99-C-98489/9-06
Period: May 1988-November 1989
Funding: $ 54,193
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center
(See page 77)
Task Leader: Benson L. Dutton
Division of Reimbursement and Economic Studies

Description: In fiscal year 1989, Medicare payments for assistants at surgery were about $350 million. The Health Care Financing Administration has placed limits on paying for assistants at surgery only in cases where teaching hospitals and cataract surgery are involved. Under this project, RAND has studied the use of assistants at surgery from data gathered for 1984, 1985, and 1986. For a number of key procedures, RAND has analyzed how much variation in the use of assistants at surgery is explained by patient, hospital, and surgeon characteristics, and by region.

Status: This project is complete. A draft final report has been received and is being reviewed.

Medical Visit Coding

Project No.: 99-C-98489/9-06
Period: August 1989-July 1990
Funding: $ 56,356
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center
(See page 77)
Task Leader: Benson L. Dutton
Division of Reimbursement and Economic Studies

Description: The primary objective of this study is to describe the variation in intensity of medical visits and to evaluate the impact of alternative ways for coding medical visits. The descriptive analysis will examine the impact of the following factors on variations in the coding of intensity level for medical visits at the carrier level: relative prices by carriers across visit codes; billing practices; specialty mix; frequency of visits; and individual physician practice patterns. In addition, RAND will evaluate the potential impact of alternative coding schemes on Medicare payments and physicians, including measures of time and/or collapsed versions of the current coding system for medical visits.

Status: This study is in the early developmental stage.

Growth in Physician Services

Project No.: 500-89-0053
Period: September 1989-April 1990
Funding: $ 234,592
Award: Contract
Contractor: Actuarial Research Corporation
6928 Little River Turnpike
Annandale, Va. 22003
Technical Director: Nancy Taplin McCall
Division of Reimbursement and Economic Studies

Description: The purpose of this contract is to study the growth in physicians' services from 1986 through 1988 and to identify significant physician expenditure patterns and trends. Specifically, national and local trends associated with high-volume office and hospital visits, surgical procedures, and diagnostic tests will be studied.

Status: The project is in the early developmental stage.

Concurrent Care During Surgery

Project No.: 99-C-98526/1-06
Period: August 1989-July 1990
Funding: $ 76,567
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: Michael Borowitz
Division of Reimbursement and Economic Studies

Description: The purpose of this project is to investigate the appropriateness of inpatient physician consultations and concurrent care under Medicare. The investigators will isolate 5-10 medical and surgical diagnosis-related groups with high rates of consultation and concurrent care, from which clinically coherent clusters of diagnoses and services will be defined. From these clusters, the investigators will develop alternative criteria for evaluating the appropriateness of consultation and concurrent care. The study will be an initial step toward developing a screening procedure for isolating inappropriate cases of consultation and concurrent care.

Status: This project is in the early developmental stage.

Concurrent Care During Surgical Admissions

Project No.: 99-C-98489/9-06
Period: August 1989-July 1990
Funding: $ 62,559
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center
(See page 77)

Task Leader: Benson L. Dutton
Division of Reimbursement and Economic Studies

Description: The three major objectives of this project are to: provide descriptive statistics documenting variations in the number of visits and consultations by non-attending physicians (i.e., other than the attending surgeon), by hospital group and by carrier, for Medicare surgical admissions; examine the effect of concurrent conditions on the number of visits and consultations by non-attending physicians; and, identify and determine the frequency of patterns of concurrent care that may be clinically inappropriate.

Status: This project is in the early developmental stage.

Global Fees for Surgery

Project No.: 99-C-98526/1-06
Period: August 1989-July 1990
Funding: $ 73,899
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: Robert L. Gruber
Division of Reimbursement and Economic Studies

Description: Most surgeons and carriers in a given area share a common definition of the global fee. However, wide variations between areas and in physician billings have been observed for related diagnostic and surgical services. Concern exists that some surgeons may bill extra for related services to offset any perceived revenue losses caused by a Medicare fee schedule based on the resource-based relative value scale. This study will involve documenting current billing patterns by surgeons for extra services and evaluating potential unbundling that might occur if a uniform national global fee definition replaces current billing practices.

Status: This study is in the early developmental stage.

Controlling Physician Expenditures in a Hospital Setting: Medical Staff Expenditure Targets

Project No.: 17-C-99489/3-01
Period: September 1989-September 1991
Funding: $ 201,314
Award: Cooperative Agreement
Awardee: The Urban Institute
Health Policy Center
2100 M Street, NW.
Washington, D.C. 20037
Project Officer: Sherry A. Terrell
Division of Reimbursement and Economic Studies

Description: The aim of this project is to study expenditure growth targets for hospital medical staffs as an alternative physician payment method that would provide incentives for physicians to contain costs of services delivered in a hospital setting. The primary study objective is to identify the distributional effects of a prospective per-case method of payment for physician services in a hospital setting (that is, both inpatient services and outpatient surgery). The inpatient payment component will be based on the average physician charge for a diagnosis-related group, and the outpatient payment component will be based on the average physician charge for a surgical code. Expenditures will be estimated for 1987, the most recent year of data available at project onset. Although this study draws on previous research, it differs from earlier work by using a national data set and post-prospective payment system implementation data, and by incorporating outpatient surgery. Results could provide useful information about how a medical staff payment model might be implemented within a physician payment system, based on volume performance standards. A medical staff risk pool is small enough for physicians to have strong incentives to control costs and unnecessary utilization. The period of performance is 2 years.

Status: The study is in the early developmental stage.

Empirical Foundations of Area Expenditure Targets

Project No.: 17-C-99473/3-01
Period: September 1989-September 1990
Funding: $ 350,000
Award: Cooperative Agreement
Awardee: The Urban Institute
Health Policy Center
2100 M Street, NW.
Washington, D.C. 20037
Project Officer: Sherry A. Terrell
Division of Reimbursement and Economic Studies

Description: This project will provide detailed descriptive analyses of variation in the volume and rates of growth in Medicare physician services and expenditures from 1985 through 1988 at State, metropolitan statistical area (MSA), and Medicare pricing locality levels. Data on rates of growth will be developed for physician specialty and by type of service. The basic objectives are to:

- Develop an appropriate data base.
- Describe extensive area variations in both the level and rate of growth in Medicare physician volume and expenditures.
- Examine the border crossing issue (the extent to which individuals living in one area use services in another area).

A number of supporting tasks are envisioned:

- A fixed-weight price index based on allowed charges will be developed.
- Sample size adequacy and the problem of low frequency services will be addressed to determine the sampling rate required to produce sound estimates for subareas such as carriers, MSAs, and localities.
- Individual services will be combined into analytically meaningful types-of-service categories with clinical

input from physician consultants. Categories are likely to include office visits, other visits, consultations, routine tests, specialized tests, diagnostic procedures, therapeutic procedures, minor surgeries and minor therapies, and major surgery.

This project will provide an empirical basis for consideration of whether volume performance standards should be uniform across the country or should vary by geographic area. The period of performance is 12 months.

Status: The study is in the early developmental stage.

Billing Patterns for Critical-Care Physician Services

Project No.: 99-C-99168/3-02
Period: August 1989-July 1990
Funding: $ 74,459
Award: Cooperative Agreement
Awardee: Project Hope Research Center
(See page 79)
Task Leader: Robert L. Gruber
Division of Reimbursement and Economic Studies

Description: The objective of this project is to evaluate the potential for bundling payments for critical-care physician services under Medicare into more inclusive payment packages. Physician critical-care services are provided in coronary care, intensive care, or other emergency care units of hospitals. An analysis of physician billing patterns for critical-care services and an examination of the extent of variation in utilization and costs will be performed. These analyses will be used to evaluate the potential for the bundling payments for these services.

Status: The project is in the early developmental stage.

Physician Practice Patterns

Project No.: 99-C-98489/9-06
Period: August 1989-July 1990
Funding: $ 100,000
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center
(See page 77)
Task Leader: Benson L. Dutton
Division of Reimbursement and Economic Studies

Description: The purpose of this study is to explore the utility of constructing a provider-level analysis file that combines information from the provider-level Part B Medicare annual data file with information about hospitalizations from the Medicare provider analysis and review file. To determine the utility of the resulting linked files, this project will include three areas of analysis in which individual physician practice patterns will be studied. The three areas relate to the role of physicians in creating costly cases, the effect of national global fee standards on the reimbursement of individual surgeons, and the practice of billing for assistants at surgery by primary providers.

Status: This study is in the early developmental stage.

Growth in Physician Services and Utilization, Diffusion, and Substitution of High-Technology Procedures

Project No.: 500-89-0050
Period: September 1989-June 1990
Funding: $ 235,096
Award: Contract
Contractor: Health Economics Research, Inc. (HERI)
75 Second Avenue, Suite 100
Needham, Mass. 02124
Technical Director: Nancy Taplin McCall
Division of Reimbursement and Economic Studies

Description: The purpose of this contract is to document trends in physician spending and utilization from 1985 through 1988. Researchers will examine geographic variation in spending levels and in rates of change in utilization over time. A Laspeyres index will be developed to provide a means for disentangling the volume increase associated with new users from that caused by greater intensity of service. They will also study patterns of growth in six new technologies and the extent to which they substitute for, or simply add to, existing tests and procedures.

Status: The project is in the early developmental stage.

Growth in the Volume and Intensity of Physician Services: Issues and Options

Funding: Intramural
Project Director: Terrence L. Kay
Division of Reimbursement and Economic Studies

Description: A Report to Congress was developed in compliance with the Omnibus Budget Reconciliation Act of 1987, Section 4056(c)(2) of Public Law 100-203, which requires the Secretary of Health and Human Services to study and report to Congress on issues related to volume and intensity (VI) of physician services. The report focuses primarily on Medicare Part B physicians' services that account for the majority of Part B expenditures. To support the production of this report, the Department analyzed national trends in total allowed charges for physician services, consulted with nationally recognized health research experts, and commissioned four extramural research studies. The report provides background information on VI issues, including discussion of factors contributing to physician expenditure growth (Chapter 1), presents trends in VI growth and reviews the research commissioned by the Department to analyze VI-related issues (Chapter 2), reviews Medicare's and private payers' experiences with VI control methods (Chapter 3), discusses options for protecting beneficiaries and the Medicare program from

the impact of VI (Chapter 4), and concludes with a discussion of possible impacts of a resource-based relative value scale on VI (Chapter 5).

Status: The Report to Congress was submitted by the Secretary. A summary article will appear in the Summer 1990 issue of the *Health Care Financing Review*.

Physician Pricing Issues

Physicians' Practice Costs and Income Survey Data Base Management

Project No.: 500-87-0005
Period: January 1987-December 1988
Funding: $ 397,575
Award: Contract
Contractor: Jil Systems and Services, Inc.
1225 Jefferson Davis Hwy., Suite 1209
Arlington, Va. 22202
Project Officer: Sherry A. Terrell
Division of Reimbursement and Economic Studies

Description: The Physicians' Practice Costs and Income Survey (PPCIS) was a major national survey of approximately 4,700 physicians that was completed in 1985. The basic purpose of this data base management contract is threefold: to manage the PPCIS data base so that it is available to a wider audience than the Health Care Financing Administration (HCFA); to update and create specific analyses for HCFA as requirements arise; and to develop a data base for use on personal computers.

Status: This project has been completed. The following computer products and related documentation are available from the National Technical Information Service (NTIS):

- 1976 Physicians' Practice Cost and Income Survey (PPCIS): U.S. Public Use Data Tape, 1976, accession number PB89-221857; Documentation, accession number PB89-221865.
- 1977 Physicians' Practice Cost and Income Survey (PPCIS): U.S. Public Use Data Tape, 1977, accession number PB89-221832; Documentation, accession number PB89-221840.
- 1978 Physicians' Practice Cost and Income Survey (PPCIS): U.S. Public Use Data Tape, 1978, accession number PB89-151328; Documentation, accession number PB89-151336.
- 1983-1985 Physicians' Practice Cost and Income Survey (PPCIS): U.S. 1983-1985 Public Use Data Tape, accession number PB86-215027; User's Guide and Codebook Documentation, accession number PB86-215019.
- Physicians' Practice Cost and Income Survey (PPCIS) 1983-1985 Personal Computer Database System: Diskettes (7), accession number PB89-106975 (supersedes accession number PB88-222674); Documentation, accession number PB88-222682.
- DoctorD-1989: dBase III PLUS Physician (Part B Medicare) Personal Computer Reference System: Diskettes (6), accession number PB90-500018; User's Guide and Documentation, accession number PB90-100181.

Technical support was also provided for the HCFA severity adjustor software for Medicare mortality prediction under this contract. In addition, the report on the geographic cost of physician practice entitled "On Establishing a Geographic Medicare Economic Index: Some Illustrations," is also available from NTIS, accession number PB89-103857.

1988 Survey of Physicians' Practice Costs and Incomes

Project No.: 500-88-0045
Period: June 1988-June 1990
Funding: $ 1.8 million
Award: Contract
Contractor: National Opinion Research Center (NORC)
1155 East 60th
Chicago, Ill. 60637
Project Officer: Nancy Taplin McCall
Division of Reimbursement and Economic Studies

Description: The purpose of this contract is to interview 5,000 U.S. physicians on the cost of practice, productivity, malpractice insurance, volume intensity of certain procedures, and out-of-pocket costs to beneficiaries. The survey results for the 9 census divisions will focus on 16 medical specialties divided into 3 types of areas—large urban, small urban, and rural.

Status: The survey team entered the field on July 24, 1989, with an expected completion date of March 31, 1990. Public use data tapes and documentation are expected to be available by Fall 1990.

Impact of Medicare Fee Freeze and Participation Agreements on Physicians

Project No.: 17-C-98758/1-03
Period: September 1985-November 1988
Funding: $ 975,747
Award: Cooperative Agreement
Awardee: Center for Health Economics Research
75 Second Avenue, Suite 100
Needham, Mass. 02194
Project Officer: Terrence L. Kay
Division of Reimbursement and Economic Studies

Description: The project studied how physicians have responded to the Medicare physician fee freeze and participation agreement established in the Deficit Reduction Act of 1984 (Public Law 98-369). The primary objective was to determine whether physicians increased the volume of services provided or the levels and mix of services during the period when their fees and Medicare reimbursements were frozen. The fee

freeze study used 100 percent of the Medicare Part B claims files from the States of Alabama, Connecticut, Washington, and Wisconsin for calendar years 1983-86. Econometric analyses of the participation agreement were performed using data from the 1984 Physicians' Practice Costs and Income Survey. Special analyses of the impact of the hospital prospective payment system on physicians and analyses of refinements in the way Medicare pays for physician services were also conducted.

Status: This project has been completed. Claims data for 1983-86 were acquired and analytic files were constructed for all four carriers. Data from 1984 were used to complete a report for three potentially overpriced procedures: lens implants, coronary artery bypass grafts, and pacemaker implants. Econometric analyses of the physician's decision to sign the Medicare Physician Participation Agreement, using the 1984 Physicians' Practice Costs and Income Survey, have also been completed. The following reports have been completed and are available from the National Technical Information Service:

- "What Should Medicare Pay for Surgical Procedures?," accession number PB86-215605.
- "To Sign or Not to Sign: Physician Participation in Medicare, 1984," accession number PB87-201463.
- "Learning by Doing: Productivity Gains for Surgeons Performing Coronary Artery Bypass Grafts," accession number PB88-239926.
- "Impact of Prospective Payment System on Medicare Part B Expenditures and Utilization Associated with Hospital Admissions," accession number PB89-223366.
- "Impact of the Medicare Fee Freeze on Physician Expenditures and Volumes," accession number PB89-159016 (the project's final report).

Analysis of Medicare Customary Charge Distributions

Project No.: 17-C-99229/3-01S2
Period: June 1988-March 1990
Funding: $ 367,238
Award: Cooperative Agreement
Awardee: HK Research Corporation
21 Governor's Court
Baltimore, Md. 21207
Project Officer: Benson L. Dutton
Division of Reimbursement and Economic Studies

Description: The goals of this project are:

- To develop a data base on customary charge distributions in four States for multiple years.
- To analyze the distribution of customary charges relative to the prevailing charges within the Medicare pricing locality over time.
- To simulate the redistributive effects of potential changes in physician payment parameters.

A data base will be developed by which volume-adjusted customary charge distributions and variations will be examined. Simulations of the impact of alternative payment proposals will also be conducted.

Status: This project is an extension of earlier work involving comparative analyses of prevailing charges and customary charge data over time (1987-89), from four moderately sized Medicare Part B carriers (Alabama, Arizona, Oklahoma, and Oregon). This supplemental award will allow project staff to investigate the feasibility of collecting customary and prevailing charge data from several large Medicare Part B carriers (e.g., California, Massachusetts, Ohio, and Pennsylvania). Data from this project are expected to contribute to the development of physician payment reform policies and should be available in Spring 1990.

A National Study of Resource-Based Relative Value Scales for Physician Services

Project No.: 17-C-98795/1-03
Period: September 1985-June 1990
Funding: $ 3,781,027
Award: Cooperative Agreement
Awardee: President and Fellows of Harvard College
Harvard School of Public Health
1350 Massachusetts Avenue
Holyoke Center, 4th Floor
Cambridge, Mass. 02138
Project Officer: Jesse M. Levy
Division of Reimbursement and Economic Studies

Description: Phase I of this study developed a national resource-based relative value scale (RBRVS) and presented results for physician services in 18 specialties. Resource-based relative values are hypothesized to be a function of physician work before, during, and after the service, specialty-specific relative practice costs, and specialty-specific relative opportunity costs. Physicians were surveyed to determine the amount of work expended during the performance of 409 services and procedures. Weighted least squares was employed to make work across specialties comparable. Extrapolation techniques were used to generate relative values for additional nonsurveyed services in the studied specialties. The Phase I study showed a large variation in resource requirements both within and among specialties. The study also subjected the methodology and results to review by experts in various fields. Phase II of the cooperative agreement extends the study to 15 additional specialties and subspecialties, and refines and revises the study methodology.

Status: Phase I of the study has been completed. The final report for Phase I is available in several volumes plus data tapes from the National Technical Information Service:

- Volume I. Executive summary, accession number PB89-101828.
- Volume II. Data description and analysis, accession number PB89-101836.
- Volume III. Results and conclusions for surveyed procedures, accession number PB89-101844.

- Volume IV. Copies of surveys and other information, accession number PB89-101851.
- Volume IVA. Visit and consult methodology and results, accession number PB89-164412.
- Volume V. Documentation for the data tape, accession number PB89-101869.
- Volume VI. Final values and components, accession number PB89-164420.
- Survey data tape (including Volume IV and Volume V documentation), accession number PB89-101810.
- Phase I final values data tape, accession number PB89-164404.

Phase II of the project is proceeding.

Relative Value Scales for Physician Services

Funding: Intramural
Project Director: Jesse M. Levy
Division of Reimbursement and Economic Studies

Description: Under the Consolidated Omnibus Budget Reconciliation Act of 1985 (Public Law 99-272), the Secretary of Health and Human Services is required to develop a relative value scale (RVS) for physicians' services and to make recommendations to Congress for using this scale in determining the payment for Medicare Part B physician services. The resource-based relative value scale (RBRVS), developed by William C. Hsiao, Ph.D., and his colleagues at Harvard University under a cooperative agreement with the Health Care Financing Administration, and modifications made to the RBRVS model, are the focus of this Report to Congress.

Status: The report, "Relative Value Scales for Physician Services," was submitted to Congress. It focuses on the viability, development, evaluation, strengths, weaknesses, and possible uses of the RBRVS. General issues covering the Medicare payment system, the construction of the RVSs, methodological issues, and simulations of the impact of various payment options based on RVSs are discussed in the report. It also covers adjustments for differences in practice costs among geographic areas. It is one of three reports produced in a single volume, "Medicare Physician Payment," and is available from the Superintendent of Documents, U.S. Government Printing Office, stock number 017-060-00314-6. The cost is $15 domestic; $18.75 foreign.

Geographic and Temporal Variations in Medicare Physician Expenditures

Project No.: 17-C-98999/1-03
Period: June 1987-June 1990
Funding: $ 1,522,274
Award: Cooperative Agreement
Awardee: Center for Health Economics Research
75 Second Avenue, Suite 100
Needham, Mass. 02194
Project Officer: Terrence L. Kay
Division of Reimbursement and Economic Studies

Description: This project will address a broad range of physician payment issues. Initially, the project will focus on the construction of a data file using 1985-88 merged Part A and Part B claims from 10 carriers that represent all 9 census regions and 18 percent of Medicare beneficiaries. Examples of issues to be analyzed using these files include: overpriced surgical and anesthesia fees, decomposition of Part B expenditures into price and quantity components, effect of competition on price and quantity variation, variation in assignment rates and participation, inpatient and outpatient practice patterns and substitutions over time, and incentives provided by Medicare's at-risk payment rates. Simulations of selected physician payment changes will also be performed.

Status: Carrier claims data for 1985-87 have been received for all States. A report entitled "Geographic Variation in Surgical Fees," which provides a summary of findings for six surgical fees for 1986, has been received. It is available from the National Technical Information Service, accession number PB90-122466. A special report entitled "Impact of Alternative Medicare Fee Schedule on Physicians," based on an analysis of a sample of 1986 national Part B data, was also completed.

Refining the Geographic Practice Cost Index: Implications for Urban and Rural Areas

Project No.: 17-C-99222/3-02
Period: June 1988-June 1990
Funding: $ 155,000
Award: Cooperative Agreement
Awardee: The Urban Institute
Health Policy Center
2100 M Street, NW.
Washington, D.C. 20037
Project Officer: Sherry A. Terrell
Division of Reimbursement and Economic Studies

Description: This study involves extending the analyses of the interim Geographic Practice Cost Indexes (GPCIs) previously developed under cooperative agreement 99-C-98526/1-05. The analyses performed will include refining and updating the indexes, evaluating the relationship among the various index alternatives, measuring how the refined and updated numbers differ from the interim set, and revising some earlier comparisons between prevailing charges and practice costs.

Status: More refined indexes have been developed, resulting in fewer methodological compromises. The basic structure of the indexes, a Laspeyres input price index, was retained. Sampling error was substantially reduced by using earnings data from the 20-percent sample of the 1980 Census instead of the 1-percent public use file. A second set of refinements included the

use of more current data to update cost weights. The indexes were then calculated for metropolitan statistical areas and rural areas of States, as well as by States and the Medicare pricing localities. Special attention was given to rural areas. Work in calculating an index for Puerto Rico is continuing. A final report entitled "The Geographic Medicare Index: Alternative Approaches," describing the steps undertaken to refine the indexes, is available from the National Technical Information Service, accession number PB89-216592. A companion paper entitled "Does Cost of Practice Explain Geographic Differences in Medicare Fees?" is available from the Urban Institute Publication Office, Washington, D.C. A related article, "Cost of Practice and Geographic Variation in Medicare Fees," was published in *Health Affairs*, Vol. 8, No. 3, Fall 1989. Another publication, "Growth in Medicare Expenditures, 1983-1985: Was PPS a Factor?" is also available from the Urban Institute Publication Office. Other tasks to be conducted over the next year include specialty-specific analyses of malpractice premiums and an analysis of assignment rates. Final reports are expected by mid-1990.

Medicare Physician Experience Differentials

Project No.: 99-C-98489/9-06
Period: July 1988-July 1990
Funding: $ 30,401
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center
(See page 77)
Task Leader: William J. Sobaski
Division of Reimbursement and Economic Studies

Description: Under current policies as defined by Medicare, new physicians are reimbursed at 80 percent of the prevailing rate for experienced physicians. This study is an attempt to analyze whether the size of the payment differential is appropriate and whether current policies provide comparable incentives to encourage new and experienced physicians to treat Medicare patients.

Status: Data have been gathered from a variety of sources and informal contacts concerning physician earnings and/or payment according to experience. RAND is currently performing its analyses. A final report is expected by mid-1990.

Global Fees

Project No.: 99-C-98489/9-06
Period: May 1988-December 1989
Funding: $ 90,886
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center
(See page 77)
Task Leader: Benson L. Dutton
Division of Reimbursement and Economic Studies

Description: The Medicare fee for a surgical procedure that currently includes all normal and uncomplicated followup care is called a global fee. This fee includes the attending surgeon's visits to the patient while in the hospital and may include followup visits after the patient is discharged. Because the prospective payment system has resulted in large decreases in the length of hospital stays, further research is needed into global fee billings. This research will give better understanding of the changes taking place in the number of services and visits provided under a global fee as well as overall reimbursement and billing patterns. The purpose of this project, therefore, is to examine the issues relating to global fee billings and reimbursement patterns.

Status: There are two primary tasks remaining in this project. The first is to complete an analysis of geographic variations in length-of-stay changes between 1984 and 1986 for each of the surgical procedures under study. The second task is to complete a final report that synthesizes descriptive findings on length-of-stay changes with the remaining analyses of geographic variations. A draft final report is expected by mid-1990.

Geographic Variation in Inpatient Physician Consultation Rates

Project No.: 99-C-98526/1-05
Period: May 1988-July 1989
Funding: $ 51,829
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: Terrence L. Kay
Division of Reimbursement and Economic Studies

Description: This study is an examination of the distribution of Medicare Part B consultation dollars by physician specialty, beneficiary characteristics, geographic area, and type of admission. Analyses will be performed on the variation in consultation rates across the country, as well as on the variation in procedure code distribution and in mean allowed charges per consultation. These analyses will include a comparison of hospital visits and consultations to determine whether these two services are being used interchangeably for billing purposes.

Status: The final report has been received and is being reviewed.

Urban and Rural Differences in Physician Practices

Project No.: 99-C-98526/1-06
Period: August 1988-July 1990
Funding: $ 54,270
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: Michael Borowitz
Division of Reimbursement and Economic Studies

Description: The purpose of this study is to provide a comprehensive comparison of urban and rural physician practices. Its objective is to create a general set of baseline data on physicians' practices in different types of communities. Among the kinds of questions to be explored are:

- Are physicians in rural areas likely to be younger than those located in urban communities?
- Is the rural specialty mix different from the urban one?
- Are solo practitioners more prevalent in rural areas than in urban communities?
- Are hospital affiliation patterns different in rural and urban areas?
- Do rural physicians work more hours and see more patients in an average week than their urban counterparts?
- Are rural physicians more or less dependent on public payers (Medicare and Medicaid)?
- Are third-party payment rates in rural areas (relative to usual fees) lower or higher than those in urban areas?
- Does Medicare's share of a physician's practice relate to other characteristics?

Status: A special purpose public-use file for the 1986 Socioeconomic Monitoring System Core Survey of the American Medical Association was received. Subsequently, a number of descriptive analyses have been completed. Preliminary findings are that:

- Urban physicians are more specialized than rural physicians, especially in surgical specialties (ophthalmology and orthopedics) used frequently by Medicare beneficiaries.
- Rural physicians are more likely to practice alone, to be self-employed, and to be organized as sole proprietors than are urban physicians.
- Rural physicians are less likely to participate in Medicare, and nonparticipating rural physicians have lower assignment rates than urban practitioners.
- Rural physicians are more dependent on public sources of revenue, such as Medicare and Medicaid, than their urban counterparts.

Over the next year, these descriptive analyses will be extended to examine differences in cost of practice, fees, productivity, type and mix of services and procedures provided, and the volume of services provided. A final report is expected in mid-1990.

Urban and Rural Manpower Shortage Areas

Project No.: 99-C-98526/1-05
Period: August 1988-July 1989
Funding: $ 43,834
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: Sherry A. Terrell
Division of Reimbursement and Economic Studies

Description: This project was an evaluation of the appropriateness of the Public Health Service shortage-area definitions for Medicare payment purposes. The criteria used for designating health manpower shortage-area (HMSA) status were reviewed, as well as the geographic units actually used to define an area (e.g., the use of census tracts or smaller geographic areas). The stability of shortage-area definitions over time, and the feasibility of identifying these shortage areas from Medicare carrier data were examined. Finally, the implications of urban manpower shortage-area bonus payments for physicians and any perverse incentives that might be introduced were evaluated.

Status: This project has been completed. The final report, "Medicare Bonus Payments to Physicians in Health Manpower Shortage Areas," is available from the National Technical Information Service, accession number PB89-223374. The report describes how HMSAs are defined and reviews the literature on physician location choices, regional distributions of physicians, physician manpower stock and financial opportunities, and the locational choice of new physicians. The authors concluded that bonuses for physicians in HMSAs might be more successful in retaining physicians already practicing in such areas rather than in attracting new physicians. Also, bonuses in HMSAs might induce physicians to expand their Medicare or Medicaid patient load and/or more readily accept Medicare assignment. Little empirical evidence was found to assess the extent to which bonus payments may be successful in retaining physicians in urban shortage areas, and no evidence was found with which to validate the data and the process used to designate HMSAs.

Development of Physician Malpractice Index Reports

Project No.: 500-88-0032
Period: July 1988-March 1989
Funding: $ 96,786
Award: Contract
Contractor: Metrica, Inc.
2203 Timberloch Place, Suite 213,
Drawer 13
The Woodlands, Tex. 77380
Project Officer: William J. Sobaski
Division of Reimbursement and Economic Studies

Description: The project sought to develop three types of indices of physician malpractice insurance costs. They are fixed liability limits, actual premium expenditures by physicians, and constant risk. The latter index examines changes in the costs of sufficient malpractice insurance coverage to provide a constant minimum risk of loss of physician earnings or capital from malpractice awards. Empirical comparisons were developed using premium data of a major insurer and physician survey data from the American Medical Association during the period 1975-85.

Status: The project was successfully completed in March 1989. The final report, entitled "A Comparison of Physician Malpractice Insurance Indices," is available from the National Technical Information Service, accession number PB89-191209.

Malpractice Component of the Medicare Economic Index

Funding: Intramural
Project Director: Benson L. Dutton
Division of Reimbursement and Economic Studies

Description: Each year, the Health Care Financing Administration (HCFA) publishes the Medicare Economic Index (MEI) (congressionally mandated by Public Law 92-603) for use in establishing the reasonable charges for physician services. The MEI is developed by HCFA's Office of the Actuary in accordance with the basic methodology set forth in 42 *Code of Federal Regulations* 405.504(a)(3)(i) from selected components of the Consumer Price Index or the Producer Price Index. Since January 1, 1987, the MEI increase factors have been established by Congress through Section 9331(c)(i) of Public Law 99-509 for fee-screen year (FSY) 1987, Section 4041(a) of Public Law 100-203 for the first 3 months of FSY 1988, Section 4042(b)(4)(F)(ii) of Public Law 100-203 for the remainder of FSY 1988, and Section 4042(b)(4)(F)(iii) of Public Law 100-203 for FSY 1989. At this time, no provisions for establishing MEI increase factors for FSY 1990 have been set. HCFA's Office of Research and Demonstrations develops the data for the calculation of the malpractice component of the MEI. Data for calculating the malpractice component are obtained annually from major medical malpractice insurers. The medical malpractice component estimates the annual changes in medical malpractice insurance premiums for specific levels of coverage.

Status: The requisite data have been obtained so that results could be provided to HCFA's Office of Actuary. Announcement of the MEI will be made in the February 1, 1990 *Federal Register*, for FSY 1990 (January 1, 1990 to December 31, 1990).

Diagnostic Test Interpretation and Medical Visit Billing

Project No.: 99-C-98526/1-05
Period: May 1988-March 1989
Funding: $ 113,346
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: Terrence L. Kay
Division of Reimbursement and Economic Studies

Description: An important source of increased Medicare Part B expenditures is the growing volume of diagnostic tests. This study was designed to document the frequency with which interpretation fees for these diagnostic tests are billed separately from the medical visit made by the physician performing the service. Variations in billing practices for each type of test and visit, by physician specialty, and by area of the country were examined. The redistributive impact of packaging visits and test interpretation into a single payment was simulated. Findings showed that budget savings could be achieved by disallowing extra billing for some tests such as electrocardiogram interpretations during selected visits, but that savings might be offset by physician upcoding or downcoding of visits. Researchers questioned whether billing for both visits and selected minor surgical (starred) procedures or endoscopies depends on whether other significant physician services were provided to the patient during the visit.

Status: The final report, "Packaging Diagnostic Test Interpretation and Surgical Procedures with Office Visits," is available from the National Technical Information Service, accession number PB89-223382.

Diagnostic Tests: Technical Components

Project No.: 99-C-99169/5-01
Period: May 1988-June 1989
Funding: $ 106,479
Award: Cooperative Agreement
Awardee: University of Minnesota Research Center
(See page 79)
Task Leader: Sherry A. Terrell
Division of Reimbursement and Economic Studies

Description: Diagnostic test use in the Medicare program is growing and is believed to be an important factor in the rise of Part B outlays. The objectives of this project were to:

- Examine whether diagnostic tests are currently being billed as technical components or as global fees.
- Study the variations in Medicare payments for the technical component of high-volume diagnostic tests.
- Analyze alternative methodologies and criteria to judge whether payment levels for the technical components are excessive.
- Explore the feasibility of using information on rates of return for diagnostic test equipment to determine whether Medicare payment levels are excessive.
- Document the types of equipment that are typically used in physicians' offices and how these vary by specialty and by size of physician practice.

Status: This project has been completed. Medicare Part B charge levels for diagnostic tests were examined and the feasibility of pricing the technical component for such tests based on the return on capital invested in test equipment was explored. Fifteen Medicare high-volume or high-cost tests were studied: X-rays of the chest, shoulder, pelvis, hip, knee, foot, and gastrointestinal track, spirometry, computerized axial tomography (CAT) scans, noninvasive vascular testing, Holter and real time ambulatory cardiac monitoring, electrocardiograms (EKGs), abdominal ultrasound, and

ophthalmic biometry. Only modest variation in technical charges across specialties, except for ophthalmic biometry and real time EKG monitoring, was found. However, substantial variations in technical charges were found across regions, carriers, and pricing localities. The final report, "Methods and Pricing the Technical Component of Diagnostic Tests," and appendices are available in two volumes from the National Technical Information Service, accession numbers PB89-232789 and PB89-232797, respectively.

Diagnostic Tests, the Technical Component: Provider Volume and Ownership Patterns

Project No.: 99-C-99169/5-02
Period: August 1989-July 1990
Funding: $ 99,960
Award: Cooperative Agreement
Awardee: University of Minnesota Research Center
(See page 79)
Task Leader: Michael Borowitz
Division of Reimbursement and Economic Studies

Description: The purpose of this study is to investigate the appropriateness of payment levels for the technical component of diagnostic tests, using the Part B Medicare annual data provider file and other data sets. The technical-fee component of diagnostic tests is intended to compensate physicians for the capital costs of diagnostic equipment as well as the costs of operating the equipment. The researchers believe that the payment level for the technical component of diagnostic tests should be set just high enough to ensure both access and quality for Medicare beneficiaries. A previous study by these researchers suggested that Medicare's payment for the technical component of several diagnostic tests was "overpriced."

Status: This project is in the early developmental stage.

Medicare Payments for Anesthesia Services

Project No.: 99-C-98526/1-05
Period: May 1988-March 1989
Funding: $ 54,116
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: Sherry A. Terrell
Division of Reimbursement and Economic Studies

Description: This study provided an overview of the Medicare Part B anesthesia reimbursement system prior to the enactment of the anesthesiology fee schedule in the Omnibus Budget Reconciliation Act of 1987 (Public Law 100-203, Section 4048(b)), focusing on reimbursement options for anesthesiologists. The study had four objectives:

- To describe the current anesthesia reimbursement system under Medicare and then delineate the various payment options available to policymakers in reforming the system.
- To examine the distribution of Medicare expenditures in calendar year 1986 for anesthesia services and other procedures billed by anesthesiologists.
- To describe and evaluate the options for reforming the base unit systems used by carriers.
- To show the extent of variation in anesthesia times across procedures and carriers.
- To suggest alternative methods of paying for anesthesia time.

Status: Findings showed that in 1986, Part B allowed charges amounted to over $1 billion for anesthesia services. Most of these charges (90 percent) were for anesthesia services performed or supervised by anesthesiologists in the operating room. Only 7 percent of the total anesthesia allowed charges were for services provided outside the operating room. Payment options discussed included reform of base units, reform of time units, fee schedule diagnosis-related-group-based payment, and payment tied to the surgeon's fee. The final report, "Reforming Medicare Payments for Anesthesia Services: Issues and Options," is available from the National Technical Information Service, accession number PB89-232771.

Analysis of Variations in Anesthesia Payments

Project No.: 99-C-98526/1-06
Period: August 1989-July 1990
Funding: $ 49,348
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: Robert L. Gruber
Division of Reimbursement and Economic Studies

Description: For nearly 20 years, anesthesia services have been billed and often paid on the basis of the sum of base value units (reflecting the complexity of a procedure), time units (measuring anesthesia time), and modifier units (special circumstances), multiplied by a dollar conversion factor. Within the current system there are extensive practitioner and carrier variations in the levels for each of these factors. This study is designed to aid the Health Care Financing Administration in the adoption of a uniform relative value scale for anesthesia services that would eliminate geographic variation stemming from different base units. It will focus on determining the extent of variation in time units under both anesthesia and surgical coding systems and the comparative ability of these two sets of codes to predict time units. Finally, the study will simulate the impact of folding average time units into the base unit value on payments for specific procedures and total Medicare expenditures.

Status: The project is in the early developmental stage. Data base construction will begin in Spring 1990.

Economies in Furnishing Physician Services

Project No.: 99-C-99169/5-02
Period: August 1989-July 1990
Funding: $ 50,814
Award: Cooperative Agreement
Awardee: University of Minnesota Research Center
(See page 79)
Task Leader: Jesse M. Levy
Division of Reimbursement and Economic Studies

Description: This project will provide a conceptual, theoretical, and practical review of the economies needed in producing physician services. The objectives will be to design practical ways for the Medicare program to measure economies in furnishing physician services and to provide information that can be used to help determine appropriate fee schedule amounts for physician services under Medicare when economies are present. Specific project tasks include the development of a classification system for analyzing various types of economies in production, analysis of recent payment reform proposals in the context of the taxonomy, and assessment of potential data bases that could be used to measure economies for producing physician services.

Status: The project is in the early developmental stage.

Comparison of Medicare Fees to Private Payers

Project No.: 99-C-98526/1-01
Period: August 1989-July 1990
Funding: $ 79,771
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: Robert L. Gruber
Division of Reimbursement and Economic Studies

Description: The comparison between Medicare payments to physicians versus those of private third-party payers is likely to affect beneficiaries' access to health care and the direct cost of those services incurred by beneficiaries. This study will be used to compare the extent to which Medicare and private-payer fees differ for the same services and the extent to which changes in Medicare fees caused by a resource-based relative value scale and/or a geographic practice cost index would affect these differences. Implications of these changes to access to different types of services will be studied.

Status: This study is in the early developmental stage.

Physician Preferred Provider Organization Demonstration

Project No.: 99-C-99169/5-02
Period: May 1988-July 1990
Funding: $ 213,991
Award: Cooperative Agreement
Awardee: University of Minnesota Research Center
(See page 79)
Task Leader: Victor G. McVicker
Division of Hospital Experimentation

Description: This project involves the planning and implementation of a preferred provider organization (PPO) demonstration for physician services offered to Medicare beneficiaries as a program option. The project subtasks include:

- Analyzing and identifying site selection criteria, provider and beneficiary participation incentives, administration procedures, and the potential savings to the Health Care Financing Administration.
- Identifying potential sites and soliciting letters of interest.
- Requesting applications.
- Preparing waiver cost estimates.
- Reviewing implementation plans of selected sites and monitoring progress.

Status: The University of Minnesota, through its subcontractor, Mathematica Policy Research, Inc., has been successful in performing the preliminary activities necessary for implementing this demonstration. Five PPOs were selected for the demonstration. The following scheduled activities are planned for the remainder of this project:

- Conduct site visits to three of the five Medicare PPOs shortly before they become operational.
- Prepare waiver cost estimates on three of the five Medicare PPOs.
- Prepare a final report on implementation of the demonstration.

Physician Preferred Provider Organization Demonstration Sites

Project No.: 95-C-99346/5-01
Period: January 1989-December 1991
Funding: $ 118,038
Award: Cooperative Agreement
Awardee: Family Health Plan
3800 West 80th Street, Suite 1450
Bloomington, Minn. 55431
Project Officer: Paul A. Gurny
Division of Hospital Experimentation

Description: Family Health Plan is one of five preferred provider organization (PPO) demonstration sites participating in the Medicare physician PPO pilot demonstration. Family Health Plan is a privately owned for-profit subsidiary of Metrocare National, Inc. Family Health Plan supplies a PPO network, medical service review, and related benefit management services. The Medicare PPO demonstration will be conducted in the Minneapolis/St. Paul area and in six adjacent counties. Family Health Plan will market services primarily to employer retiree groups, although individual beneficiaries may be contacted.

Status: The demonstration project is divided into two distinct periods, a developmental phase and an operational phase. Family Health is currently in the

developmental phase and is not expected to implement the demonstration until late 1990.

Project No.: 95-C-99340/9-01
Period: January 1989-December 1991
Funding: $ 285,000
Award: Cooperative Agreement
Awardee: CAPP CARE, Inc.
17390 Brookhurst Street
Fountain Valley, Calif. 92708
Project Officer: Michael Henesch
Division of Hospital Experimentation

Description: CAPP CARE is a for-profit preferred provider organization (PPO) physician network operating in 20 States. It is one of five PPO demonstration sites participating in Medicare physician PPO pilot demonstrations. This demonstration will be conducted in Orange County, California as a nonenrollment model which will allow any beneficiary in the service area to use CAPP CARE physicians at any time. Beneficiaries who receive services from CAPP CARE physicians participating in the demonstration are assured that those physicians will accept Medicare payments as payment in full. The purpose of this project is to evaluate the performance of physicians via utilization review, medical review, and quality assurance protocols, and assess the impact on the Medicare program. The analysis will include prior authorization of all elective admissions and procedures, both inpatient and outpatient, and retrospective review based on paid claims data run against an automated ambulatory care review system.

Status: The developmental phase of the project is expected to conclude by the end of 1989. Implementation is expected to begin in Spring 1990.

Project No.: 95-C-99342/7-01
Period: January 1989-December 1991
Funding: $ 105,062
Award: Cooperative Agreement
Awardee: HealthLink, Inc.
9666 Olive Street Road, Suite 500
St. Louis, Mo. 63132
Project Officer: Paul A. Gurny
Division of Hospital Experimentation

Description: HealthLink is one of five preferred provider organization (PPO) demonstration sites participating in the Medicare physician PPO pilot demonstration. HealthLink is a hospital-sponsored for-profit managed-care company that supplies a PPO network, medical service review, and related benefit management services. The Medicare PPO demonstration will be conducted in the St. Louis metropolitan area, southern Illinois, and mid-Missouri. HealthLink will market services to individual beneficiaries by offering a reduction in the Medicare coinsurance, and to employer retiree groups.

Status: The demonstration project is divided into two distinct periods, a developmental phase and an operational phase. HealthLink is currently in the developmental phase and is not expected to implement the demonstration until late 1990.

Project No.: 95-C-99349/0-01
Period: January 1989-December 1991
Funding: $ 105,000
Award: Cooperative Agreement
Awardee: CareMark, Inc.
2701 NW. Vaughn, Suite 710
Portland, Ore. 97210
Project Officer: Victor G. McVicker
Division of Hospital Experimentation

Description: CareMark is one of the five preferred provider organization (PPO) demonstration sites participating in the Medicare physician PPO pilot demonstration. CareMark is a managed-care company that supplies a PPO network of providers, medical service review, and related benefit management services. The Medicare PPO demonstration will be conducted in the Oregon counties of Multnomah, Washington, and Clackamas. CareMark will be marketing to Medicare supplemental insurers and to employer-retiree groups as well as to individual beneficiaries. CareMark is proposing that individual beneficiaries enrolling in the PPO pay a $10 copayment as opposed to a 20-percent coinsurance for physician office visits and a reduced coinsurance of 15 percent for surgical procedures. In addition, the Medicare Part B deductible will be waived and CareMark physicians will accept assignment.

Status: The demonstration project is divided into two distinct periods, a developmental phase and an implementation phase. CareMark is currently in the developmental phase with implementation scheduled for April 1990.

Project No.: 95-C-99341/9-01
Period: January 1989-December 1991
Funding: $ 5,205
Award: Cooperative Agreement
Awardee: Blue Cross and Blue Shield of Arizona
2444 W. Las Palmaritas Drive
P.O. Box 13466
Phoenix, Ariz. 85002-3466
Project Officer: Cynthia K. Mason
Division of Hospital Experimentation

Description: Blue Cross and Blue Shield of Arizona is one of the five preferred provider organization (PPO) demonstration sites participating in the Medicare physician PPO pilot demonstration. The service area of the demonstration is Maricopa County, which includes Phoenix and Scottsdale. Blue Cross and Blue Shield of Arizona is offering a PPO option, Senior Preferred, under its current Medicare supplemental insurance

program. The Senior Preferred option will be available to all beneficiaries in the demonstration area for a lower premium offered under the traditional Medicare supplemental insurance by Blue Cross and Blue Shield of Arizona.

Status: Blue Cross and Blue Shield of Arizona began marketing the Senior Preferred option in Fall 1988. The demonstration evaluation of the site is scheduled to begin in January 1990.

Evaluation of the Physician Preferred Provider Organization Demonstration

Project No.: 500-87-0028
Period: June 1989-December 1993
Funding: $ 730,929
Award: Technical Support: Evaluation of Demonstrations (See page 80)
Contractor: Mathematica Policy Research, Inc.
600 Maryland Avenue, SW., Suite 500
Washington, D.C. 20024-2512
Task Leader: Victor G. McVicker
Division of Hospital Experimentation

Description: An initial pilot demonstration involving five preferred provider organizations (PPOs) will be implemented in 1990. The five PPO demonstration sites are:

- Blue Cross and Blue Shield of Arizona, Phoenix.
- HealthLink of St. Louis, Missouri.
- CareMark of Portland, Oregon.
- Family Health Plan of Bloomington, Minnesota.
- CAPP CARE of Los Angeles, California.

The purpose of the pilot demonstration evaluation is to assess the operational feasibility of the Medicare PPO concept. To facilitate this assessment, the implementation and operational experience of the pilot PPOs will be comprehensively evaluated using case study methods. The assessment will include an analysis of biased selection and beneficiary choice and the impact of the demonstration on Medicare costs and utilization of each site. Since each site is a unique model, the evaluation will examine the unique features of each site and how the features contribute to the success of the site. Several crosscutting issues will be addressed to assess the operational feasibility of the Medicare PPO concept.

Status: The initial design work is under way. Drafts of the evaluation design and status report plans have been received. Final versions of the evaluation design and status report plans are expected Spring 1990.

Medicare Cataract Surgery Alternate Payment Demonstration

Project No.: 500-87-0030
Period: July 1989-December 1994
Funding: $ 602,845
Award: Technical Support: Evaluation of Demonstrations (See page 80)
Contractor: Abt Associates, Inc.
55 Wheeler Street
Cambridge, Mass. 02138
Task Leader: Michael Henesch
Division of Hospital Experimentation

Description: The objective of the task is to assist the Health Care Financing Administration in the design, implementation, and evaluation of a demonstration to assess the feasibility of an all-inclusive negotiated price concept for cataract surgery. The negotiated price, covering physician, facility, and intraocular lens costs for the procedure, would be tested at three sites, but participation by providers and beneficiaries at each site would be strictly voluntary.

Status: The initial design work is under way with the demonstration design report expected in early 1990. If the decision is made to proceed with this demonstration, site solicitation will be implemented in mid-1990.

Medicare Participating Heart Bypass Center Demonstration Design

Project No.: 99-C-99168/3-01
Period: May 1988-June 1989
Funding: $ 139,130
Award: Cooperative Agreement
Awardee: Project Hope Research Center (See page 79)
Task Leader: Armen H. Thoumaian
Division of Hospital Experimentation

Description: The goal of this project was to assist the Health Care Financing Administration to develop a design and implementation plan for a demonstration to test the concept of a negotiated, all-inclusive bundled payment for coronary artery bypass graft procedures.

Status: The contractor provided assistance in writing a design for the demonstration, analyzing potential incentives for beneficiaries and providers to participate in the demonstration, developing criteria for the selection of potential sites, soliciting letters of interest from qualified hospitals, evaluating pre-application proposals, and developing an application package. Project work was successfully completed in June 1989.

Medicare Participating Heart Bypass Center Demonstration

Project No.: 500-87-0029
Period: June 1989-December 1993
Funding: $ 540,144
Award: Technical Support: Evaluation of Demonstrations (See page 80)

Contractor: Lewin/ICF
1090 Vermont Avenue, NW.
Washington, D.C. 20005
Task Leader: Armen H. Thoumaian
Division of Hospital Experimentation

Description: The task objective is to assist the Health Care Financing Administration (HCFA) to implement and evaluate a 3-year demonstration designed to assess the feasibility of a negotiated all-inclusive pricing arrangement for coronary artery bypass graft surgery while maintaining high-quality care. Lewin/ICF will assist HCFA in preparing an evaluation and implementation plan, monitoring the demonstration sites, collecting and analyzing data, and preparing the final evaluation report.

Status: The demonstration design and solicitation of interested hospitals were completed prior to the award of this contract. Of the 206 hospitals that submitted preapplications, a review panel recommended that 42 hospitals be invited to submit demonstration applications by June 1989. Of the 27 applications that were received, an application review panel has recommended 10 finalists for further consideration. HCFA will negotiate with the finalists and select four sites. HCFA expects to announce site awards in Spring 1990, with implementation of the demonstration scheduled for Fall 1990. Lewin/ICF is currently preparing the evaluation design as well as various pre-implementation technical reports.

Other Physician Studies

Individual Practice Association Physician Relationships

Project No.: 99-C-98526/1-06
Period: July 1988-July 1990
Funding: $ 78,622
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: Sherry A. Terrell
Division of Reimbursement and Economic Studies

Description: One of the fastest growing types of capitated systems is the individual practice association (IPA). IPAs now include half of the health maintenance organization (HMO) enrollment and are expected to dominate the HMO market in the future. Types of IPAs include: all IPA physicians in one risk pool; an individual physician at risk; and a medical group practice at risk. The purpose of this study is to investigate the arrangement that IPAs have with physicians in order to develop policy options for Medicare.

Status: Innovative Medicaid programs have been examined and a final report, "Giving Physicians Incentives to Contain Costs Under Medicare: Lessons from Medicaid," is available from the National Technical Information Service, accession number PB89-238109. A number of Medicaid programs were identified that have designed innovative payment systems incorporating incentives for physicians to control costs. The report summarizes partial capitation and health insuring organization risk arrangements in seven Medicaid programs: Oregon, Santa Barbara, San Mateo, Philadelphia, Kitsap, Washington, and Monterey. A separate project task—a typology of HMOs that reflects financial incentives to physicians—is being developed. The final report for that task is expected in 1990.

Determinants of Cost of Care: The Influence of Physician Style Versus Patient Characteristics

Project No.: 99-C-99169/5-01
Period: September 1988-July 1990
Funding: $ 124,997 (Assistant Secretary for Planning and Evaluation funded project)
Award: Cooperative Agreement
Awardee: University of Minnesota Research Center
(See page 79)
Task Leader: Timothy F. Greene
Division of Reimbursement and Economic Studies

Description: Significant variations in the cost of managing patients with the same diagnosis have been documented. This study will help determine what percent of variance in the cost of care is caused by the physicians' unique practice patterns and what percent is caused by differences in patient population characteristics and disease severity. Methods will also be developed to explore the relationships among disease severity, comorbidity, and resource use in the specific care of Medicare patients with myocardial infarctions.

Status: New information on acute myocardial infarction cases sampled for the Health Care Financing Administration's Mortality Predictor study is being collected. A draft data collection instrument has been prepared and data will be extracted by two peer review organizations under subcontract to the awardee.

Physician Payment Differentials by Board Certification Status

Project No.: 99-C-99168/3-02
Period: August 1989-July 1990
Funding: $ 77,300
Award: Cooperative Agreement
Awardee: Project Hope Research Center
(See page 79)
Task Leader: William J. Sobaski
Division of Reimbursement and Economic Studies

Description: The aim of this project is to describe the extent to which physician salary arrangements for providing patient care are differentiated according to board certification status. The first phase of the project will concentrate on practices of staff-model health

maintenance organizations. The second stage will involve salaried physicians in other patient care settings.

Status: This project is in the early developmental stage.

Compendium of Office of Research and Demonstrations Physician Studies 1977-86

Funding: Intramural
Project Officer: Francine J. Jordan
Division of Reimbursement and Economic Studies

Description: The Compendium was designed to index abstracts of Medicare physician payment research and physician practice pattern studies. It contains information on all past and present grants, contracts, and cooperative agreements, and related reports or known journal articles for Medicare Part B payment projects conducted by the Health Care Financing Administration (HCFA), Office of Research and Demonstrations, or its predecessors, as well as citations to other relevant studies from 1977 through 1986. Although it focuses primarily on physician reimbursement issues, other Medicare Part B studies, such as ambulatory and outpatient care and laboratory services studies, are included. The Compendium is indexed by authors or principal investigators, organizations that performed the study, HCFA project officers, and keywords. Each entry includes an abstract and, when relevant, the National Technical Information Service (NTIS) accession number for copies of reports. There are approximately 430 entries.

Status: This project has been completed. The final report, "A Compendium of Office of Research and Demonstrations Physician Studies 1977-86," is available from the National Technical Information Service, accession number PB90-100280. A computerized version, updated through 1989, is available from NTIS, accession number PB90-50018, and documentation, accession number PB90-10081.

Physician Income Over Time

Project No.: 99-C-98526/1-06
Period: August 1989-July 1990
Funding: $ 59,537
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: Michael Borowitz
Division of Reimbursement and Economic Studies

Description: In this project, the 1975, 1978, 1984-85, and 1989 Physicians' Practice Costs and Income Surveys will be used to examine the change in physician income over time. Previous research has indicated that average physician real income has shown little growth over the past decade. However, the changing mix of physicians by age, sex, specialty, etc., has not been addressed nor have changes in physician workload. Investigators will control for changes in physician characteristics and physician workloads to see whether physician real income has changed over the last decade.

Status: This project is in the early developmental stage.

Outpatient Care

New York State Products of Ambulatory Care Reimbursement Project

Project No.: 11-C-98574/2-05
Period: September 1984-August 1990
Funding: $ 1,263,788
Award: Cooperative Agreement
Awardee: New York State Department of Social Services
40 North Pearl Street
Albany, N.Y. 12243
Project Officer: Joseph M. Cramer
Division of Hospital Experimentation

Description: The New York State Department of Social Services and the Office of Health Systems Management jointly submitted this proposal. The purpose of the project is to develop and test a prospective ambulatory care payment methodology, for both freestanding clinics and hospital-based ambulatory care services, that is predicated on a uniform cost comparison by a patient-care service classification. The project's activities can be divided into three major stages:

- Development of a patient-care classification system that associates relative resource use with patient and service characteristics in homogeneous product groups.
- Creation of payment rates.
- Demonstration and evaluation of the new system.

New York proposed development of two separate ambulatory classification systems—one for medical services known as the products of ambulatory care (PAC) and one for surgery services known as the products of ambulatory surgery (PAS). New York believes that this demonstration will result in a greater understanding of the fundamental elements of ambulatory care costs and, more importantly, the use of an equitable payment policy for pricing ambulatory care in a manner that will promote economical delivery of health care and prudent cost growth.

Status: The research phase of the project began with the design and collection of 10,000 medical visit surveys in a sample of freestanding and hospital outpatient clinics in the Bronx and Northeastern New York. Subsequent analysis of the data culminated in the development of 24 medical patient categories under PAC. Each category represents a typical bundle of services commonly provided to a particular group of patients. The PAC payment methodology places all providers in the demonstration under a more uniform, completely prospective payment methodology in which a single payment is made to a facility for each visit. The payment is composed of two components: a case-mix related price that varies by PAC, but does not change by

facility type or location; and a facility-specific cost that is derived from each facility's indirect costs and varies by facility. The PAC payment methodology is being implemented for Medicaid in two test areas in 17 facilities. A 3-year Medicaid waiver was approved August 1, 1987, with a phase-in of the 17 facilities starting in December 1987. The modeling of the PAC payment system for a Medicare "simulation" is scheduled for completion by January 1990. Following implementation, project staff activities moved to handling specific inquiries, monitoring claims, collecting evaluation data and conducting special studies.
New York also has received funding to examine the costs of ambulatory surgery services and to develop a case-mix adjusted ambulatory surgery classification and prospective payment methodology. They have developed 42 patient categories under PAS. Effective June 1, 1989, the PAS became the statewide basis for New York's Medicaid program to pay for ambulatory surgery in hospitals and freestanding surgery centers. Case-based rates of payment have been calculated for the PAS groups. All procedures within the same payment group are reimbursed at a single price. The base price for each group is adjusted for regional differences in wage levels and capital costs.

Evaluation of New York State Products of Ambulatory Care Demonstration Project

Project No.: 500-87-0030
Period: June 1988-June 1991
Funding: $ 249,935
Award: Technical Support: Evaluation of Demonstrations
(See page 80)
Contractor: Abt Associates, Inc.
4800 Montgomery Lane
Bethesda, Md. 20814
Task Leader: Joseph M. Cramer
Division of Hospital Experimentation

Description: The purpose of this project is to design and implement an evaluation of the New York State Products of Ambulatory Care (PAC) Reimbursement Project; which will build on and supplement New York State's own evaluation plan. Its primary focus will be to evaluate the New York State PAC patient classification system and payment methodology by using the PAC evaluation data set being collected from the demonstration and control sites. The project will identify other ambulatory data sources (i.e., other States) and assess their appropriateness for simulated application to the PAC patient classification and payment system.

Status: The contractor is collecting evaluation data from New York State on the development and implementation of the PAC system and arranging site visits to demonstration facilities for a case study.

Toward Prospective Payment for Outpatient Department Surgical Services

Project No.: 17-C-99019/3-03
Period: June 1987-June 1990
Funding: $ 960,254
Award: Cooperative Agreement
Awardee: The Urban Institute
Health Policy Center
2100 M Street, NW.
Washington, D.C. 20037
Project Officer: Thomas Talbott
Division of Hospital Experimentation

Description: This project will provide information necessary to assist the Health Care Financing Administration (HCFA) in designing a prospective payment system for surgical procedures performed on a hospital outpatient basis, as required by Section 9343 of the Omnibus Budget Reconciliation Act of 1986. The project is composed of five major tasks:

- Create a specialized data base by merging four data sets from the Medicare Statistical System (i.e., the 5-percent outpatient skeleton file, the Part B Medicare annual data (BMAD) beneficiary file, Medicare provider analysis and review file, and the hospital cost report information system (HCRIS) file). The new data base will contain information on facility costs, physician-covered charges, and Medicare reimbursement for similar surgical services across four different settings—the hospital outpatient department (OPD), the inpatient hospital, the ambulatory surgical center (ASC), and the physician office.
- Define an episode of care by creating analysis files with the episode of care as the unit of observation.
- Provide descriptive analyses aimed at providing information on variations in the costs, covered charges, and Medicare reimbursement and frequency of surgical procedures and medical visits both within the outpatient hospital setting and across different settings.
- Develop econometric models to determine facility, demographic, and market characteristics that explain differences in costs, covered charges, and Medicare reimbursement within hospital OPDs and between hospital OPDs and ASCs.
- Develop a simulation model that will be used to examine the impact of alternative ratesetting approaches on facility revenues and Medicare reimbursement.

The Urban Institute (UI) in conjunction with the cooperative agreement awarded to Health Systems International (HSI) will expand the last three tasks to include nonsurgery services. HSI is charged with developing an outpatient care coding system, named ambulatory patient groups (APGs), to accommodate Medicare patients treated in the hospital outpatient department. Following the refinement, UI will provide descriptive analysis and develop econometric and simulation models in an effort to evaluate the newly refined ambulatory classification system.

Status: The Urban Institute has created a working file for ambulatory surgery by merging information from BMAD and HCRIS. Within the file, 115 most frequently performed procedures have been identified and cost

weights for each have been calculated. A surgery-complexity index was developed that can be used to explain hospital surgery costs. To determine how well the surgery-complexity index is related to hospital costs, certain variables were controlled (e.g., teaching, nonteaching, geographical locations, disproportionate share, etc.). An econometric model has been developed from the 115 procedures and is being validated using 1987 BMAD and hospital outpatient data. A linking of these two files will enable UI to cross-code the *Current Procedural Terminology, 4th Edition* (CPT-4) code on the physician bill with the *International Classification of Disease, 9th Edition Clinical Modification* procedure code on the outpatient bill. CPT-4 coding is necessary for the APG classification system developed by HSI. As part of their original tasks of the cooperative agreement, UI has completed a preliminary evaluation of the various classification systems, diagnosis-related groups, ambulatory visit groups, and products of ambulatory surgery. This evaluation will be expanded to include the APGs. An analysis is ongoing using BMAD data for freestanding ASCs. The results will be compared with the econometric model from the hospital data for use in determining payment levels within different surgical settings.

Development of a Prospective Payment System for Hospital-Based Ambulatory Surgery

Project No.: 17-C-99026/1-03
Period: July 1987-September 1990
Funding: $ 728,635
Award: Cooperative Agreement
Awardee: Brandeis University
Florence Heller Graduate School
415 South Street
Waltham, Mass. 02254
Project Officer: Thomas Talbott
Division of Hospital Experimentation

Description: The purpose of this project is to provide information needed to assist in the development of a Medicare prospective payment system (PPS) for hospital outpatient surgery. This project will compare and evaluate the utility of several alternative patient-classification systems—ambulatory patient groups (APGs), ambulatory visit groups (AVGs), and diagnosis-related groups (DRGs)—in classifying outpatient cases by relative resource intensity. The study data set consists of the Health Care Financing Administration's (HCFA) 5-percent hospital outpatient bill skeleton file for 1985 with some appended hospital-specific characteristics, such as size, teaching status, geographic location, and salaried status of the physician staff. These variables will be added through a file merger with the Provider of Services Master File. The study will determine the systems' respective abilities to explain variation in resource use and will include a descriptive analysis of ambulatory surgery as well as nonsurgery cases in the sample by type of hospital (e.g., teaching status, size, etc.). In addition, the study will recommend a payment system for ambulatory care based either on APGs, AVGs, or DRGs. The analysis will be limited to the facility component for services performed in a hospital outpatient setting. The facility component associated with emergency room cases will also be analyzed. The general study approach involves grouping all outpatient surgical cases in this data set into APGs, AVGs, and DRGs. Hospital covered charges for the outpatient surgical cases will be the major measures of resource consumption and will be used as the basis to develop weights for the case-mix groups for the recommended PPS. The study will test four research hypotheses:

- AVGs or APGs are likely to explain resource use for ambulatory surgery better than DRGs.
- A substantial minority of the ambulatory surgery procedures will be grouped into the two "residual DRGs," code numbers 468 and 469, which are primary diagnosis unrelated to procedure and primary diagnosis invalid for admission, respectively.
- Little correlation exists between resources used for inpatient procedures and those used on an ambulatory basis for the same surgical procedure.
- Development of a PPS for Medicare patients' use of ambulatory care services, including surgery, is feasible and logical. This includes developing a practical working definition of, and selecting criteria for, such surgery.

Brandeis University (BU) in support of the Health Systems International (HSI) research developing APGs, will also provide HSI with a data base of hospital outpatient claims for a prescribed period of service in fiscal year 1988. The file will include not only surgery claims, but also nonsurgery services. This file will then be divided into two files; one-half of the file will be utilized by HSI to develop the APG system. The remaining half of the file will be utilized by BU to evaluate the refinement of the newly formed APGs when it is completed. BU will be performing an analysis of cataract surgery, identifying ancillary services on the bill that are related with the surgery. In addition, BU will analyze "outlier costs" associated with patients expiring in the emergency room before admission and with high-cost cases for both surgical and medical visits.

Status: HCFA data have been compiled using the 1985 and 1987 data from the hospital outpatient files. Analysis of the data indicates that DRGs are not useful as a classification system for hospital outpatient surgery. The weights established for inpatient surgery could not be applied to outpatient surgery and would have to be recalculated. About one-half of the ambulatory surgery charges fell into medical rather than surgical DRGs. In addition, the DRG system is relatively complex and requires sophisticated data processing capabilities that would be difficult for the freestanding ambulatory surgery centers to adopt. Analysis of the 1987 data indicates that:

- 25 AVGs account for approximately 75 percent of all surgical visits and 80 percent of all surgical charges.
- Minor grouping problems existed that caused surgical AVGs to be grouped into medical AVGs. The main reason was that the AVG program was developed in

1985 and has not been updated to reflect changes in the *Current Procedural Terminology, 4th Edition* (CPT-4) coding system.
- Weights were developed for approximately 190 AVGs which account for 93.4 percent of all the dollar volume for hospital outpatient ambulatory surgery.
- The coefficients of variations (CVs) for AVGs are lower than the CVs for the inpatient DRGs.

The results of the BU analysis of the AVG system were included as an appendix to a Report to Congress entitled "Development of Prospective Payment Methodology for Outpatient Hospital Surgical Services," which was released to Congress on June 28, 1988. The 1988 outpatient file, developed for HSI in conjunction with HSI's cooperative agreement, which includes surgery and nonsurgery procedures, has been developed and transferred to HSI.

Design and Evaluation of a Prospective Payment System for Ambulatory Care

Project No.: 17-C-993691/1-01
Period: February 1989-January 1991
Funding: $ 550,000
Award: Cooperative Agreement
Awardee: Health Systems International
100 Broadway
New Haven, Conn. 06511
Project Officer: Joseph M. Cramer
Division of Hospital Experimentation

Description: This project is congressionally mandated under Public Law 99-509 of the Omnibus Budget Reconciliation Act of 1986. The purpose of this project is to develop a patient classification system that can be used as the basis of payment for an outpatient prospective payment system for Medicare. The payment system must be administratively feasible, implemented with Medicare claims data, and applicable as a basis of payment for facility costs and potentially for physician fees. Another task of the project is to develop a system that can be used for the prospective payment of ambulatory care services in both hospitals and ambulatory surgical centers. The major objectives of this project are:

- Develop ambulatory patient groups (APGs) as a classification system using Medicare outpatient data from hospitals and ambulatory surgical centers.
- Develop APGs that include all nonphysician outpatient facility services in the Medicare claims data and reduce the number of groups.
- Simulate the effects of the APG system as part of developing recommendations about the preferable payment system.
- Create APG systems that include facility payments only, professional payments only, and global payments (i.e., professional and facility payments combined).
- Provide analysis and information on prospective payment for outpatient care that will be incorporated in a Report to Congress.

Status: Health Systems International (HSI) has developed a list of surgical APGs and APGs for diagnostic radiology and lab tests. The groups were formed based on clinical judgment from *Current Procedural Terminology, 4th Edition* procedure codes within body systems and analysis of data from several Medicare and other data files. The objective of the process is to have clinically similar groups of procedures with similar resource use. HSI is continuing to evaluate the data and will form final groups based on additional statistical and clinical input. An independent evaluation of the surgical APGs will then be performed by Brandeis and the Urban Institute. HSI is starting to develop groups for medical visits and considering how to bundle associated diagnostic or lab tests into the groups. Medical ambulatory visit groups will then be tested and policy options evaluated.

Review of Private Sector's Payment Methodologies for Hospital Outpatient Services

Project No.: 99-C-99168/3-01
Period: October 1988-October 1989
Funding: $ 40,504
Award: Cooperative Agreement
Awardee: Project Hope Research Center
(See page 79)
Task Leader: Thomas Talbott
Division of Hospital Experimentation

Description: It is important that the Health Care Financing Administration have an understanding of private insurers' methodologies for outpatient services as it designs the congressionally mandated outpatient prospective payment system (PPS). This study focuses on the identification, analysis, and description of existing and developmental private payer systems. Information will be collected on outpatient payment systems for surgical and nonsurgical care.

Status: A draft final report, "Review of Private Sector's Payment Methodologies for Hospital Outpatient Services," was received in September 1989 and is currently under review. Researchers were able to identify only a limited number of private insurers that had actually established a PPS for outpatient surgical and medical services. They concluded, based on a review of these insurers, that the private-sector systems would not contribute materially to the design of a Medicare PPS for outpatient services.

Bundling Physicians' Services in Hospital Outpatient Departments

Project No.: 99-C-98526/1-06
Period: August 1989-July 1990
Funding: $ 75,996
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: Sheldon Weisgrau
Division of Hospital Experimentation

Description: The purpose of this project is to identify the utilization patterns and characteristics of Medicare beneficiaries receiving services in the hospital outpatient department. Brandeis will focus on the identification of nonsurgical services that are provided on a serial basis (e.g., chemotherapy) that potentially could be bundled together for payment purposes.

Status: The contractor has completed a literature review and is presently working with Urban Institute and Health Care Financing Administration data files to identify beneficiaries with multiple visits to the outpatient department and the services that these beneficiaries have used. The final report is expected in July 1990.

Extending the Medicare Prospective Payment System to Post-Hospital Care: Preparing for a Demonstration

Project No.: 95-C-9907619-01
Period: June 1987-December 1989
Funding: $ 914,842
Award: Cooperative Agreement
Awardee: The RAND Corporation
1700 Main Street
Santa Monica, Calif. 90406
Project Officer: Kathleen M. Farrell
Division of Hospital Experimentation

Description: The purpose of this project is to consider the issues and options in the design of an extended Medicare prospective payment system (PPS). The extended PPS would bundle hospital, skilled nursing facility, home health care, and rehabilitation hospital services into a single prospective payment for an entire episode of care. The initial phase of this project, funded by the Health Care Financing Administration and conducted by the RAND Corporation, laid out the rationale for the structure of an extended PPS. It also described, in general, how a demonstration of the proposed PPS might be designed and implemented. The basic concept is that payments would be made to the hospital or a third-party comprehensive Part A payer for both inpatient and post-hospital care that would not be contingent on actual use of post-hospital services. Payments would continue to be based on diagnosis-related groups. This phase further refined the demonstration design and considered criteria for selecting demonstration sites.

Status: The initial phase of this project has been completed.

Laboratory Industry Technology and Productivity Changes

Project No.: 99-C-99169/5-02
Period: August 1989-October 1990
Funding: $ 99,997
Award: Cooperative Agreement
Awardee: University of Minnesota Research Center
(See page 79)
Task Leader: Paul A. Gurny
Division of Hospital Experimentation

Description: This study is designed to examine the effects of technological advances on the cost of laboratory services in different provider/supplier settings. The awardee will conduct the following tasks:

- Conduct a thorough review of the available sources of data on test cost and quality.
- Examine the relative costs of producing a specific subset of clinical lab tests at different volumes and in different settings.
- Describe the temporal changes in the costs of performing selected tests because of technical changes and the relationship between cost and charges for those tests over time.
- Analyze how Medicare payments relate to the actual costs of those tests.

Status: The study is in the early developmental stage of gathering data on test costs and quality.

Capitated Payment Systems

Refinements to the Adjusted Average Per Capita Cost

Determination of Health Maintenance Organization Capitation Rates for Medicare Beneficiaries

Project No.: 17-C-98804/9-03
Period: September 1985-August 1989
Funding: $ 1,046,935
Award: Cooperative Agreement
Awardee: Kaiser Foundation Research Institute
3505 Broadway, Suite 1112
Oakland, Calif. 94611
Project Officer: Gerald F. Riley
Division of Beneficiary Studies

Description: The purpose of this project is to investigate the issue of biased selection into health maintenance organizations (HMOs) and the problem of developing a risk-adjustment methodology for HMO payments by using both internal Kaiser data and data from the Medicare Statistical System. The investigator's specific aims were:

- To predict health care costs for groups of stayers and switchers in the fee-for-service sector and an HMO (Kaiser), and to estimate the degree of selection bias, if any, among HMO enrollees.
- To simulate Medicare capitation rates for an HMO using alternative risk-adjustment methods and compare them with the current adjusted average per capital cost rate.
- To develop and test a risk-adjustment methodology employing cause-specific mortality and hospital morbidity for predicting aggregate use of medical care services in future years by Medicare beneficiaries enrolled in an HMO.

- To examine the implications of a separate reinsurance program for case-specific expenses above a specified level of alternative risk-adjusted capitation methods.
- To develop a risk-adjustment methodology by using ambulatory morbidity and self-perceived health status for predicting future aggregate use of medical care services by Medicare beneficiaries enrolled in an HMO.

Status: The project was extended for 1 year through August 1989. A draft final report is expected in mid-1990.

Adjusted Payment Rates in Capitated Systems

Project No.: 17-C-98990/3-02
Period: June 1987-September 1989
Funding: $ 383,659
Award: Cooperative Agreement
Awardee: The Johns Hopkins University
Center for Hospital Finance and Management
624 North Broadway
Baltimore, Md. 21205
Project Officer: James C. Beebe
Division of Beneficiary Studies

Description: The project was based on the premise that sophisticated models and detailed classification of diagnoses by a large panel of physicians could result in a health maintenance organization (HMO) payment system that is much more accurate than either the current system or any other proposed approaches. The use of a 4-equation logistic/multivariate regression model that had first been proposed by RAND was investigated. About 150 physicians, including many in the HMO setting, were surveyed to develop a system for classifying 4- or 5-digit diagnostic codes according to their level of discretion on the decision to admit to a hospital and on their likelihood of representing a chronic condition. It was found in the investigation that the 4-part model does yield marginally better predictions than single equation, linear models, but the improvement was not enough to justify the additional complexity. The final, recommended model is a geographically adjusted linear regression equation whose primary variable categories are: demographics, chronicity and discretionary variables (based on the physician classification system), whether there was one or more than one hospitalization, whether the Part B deductible was met, and the major diagnostic category of any hospital stay. The model excluded the most costly 1 percent of beneficiaries because they are the hardest to predict.

Status: The draft final report for this project has been reviewed and is currently being revised to reflect comments from the Office of Research and Demonstrations, Health Care Financing Administration.

A Selectivity Bias Correction for the Medicare Adjusted Average Per Capita Cost

Project No.: 17-C-99040/5-02
Period: June 1987-September 1990
Funding: $ 499,601
Award: Cooperative Agreement
Awardee: University of Minnesota School of Public Health
420 Delaware Street, SW., Box 729
Minneapolis, Minn. 55455
Project Officer: Gerald F. Riley
Division of Beneficiary Studies

Description: The primary objective of the project is to develop a methodology for producing unbiased estimates of the degree of biased selection present among health maintenance organization (HMO) enrollees. The method corrects for unobserved as well as observed characteristics of beneficiaries that influence both the beneficiaries' choices of health plan (i.e., HMO or fee-for-service) and the subsequent amount of resources consumed. The model will produce an unbiased estimate of what a group of HMO enrollees would have cost if they had remained in fee-for-service; this is how the adjusted average per capita cost (AAPCC) is defined. The project will go beyond current studies of biased selection by controlling for unobserved as well as observed characteristics that influence beneficiary choice of health plan and future use of services. A method will be developed for producing an unbiased AAPCC (i.e., an unbiased estimate of what a group of HMO enrollees would have cost under fee-for-service).

Status: Beneficiary interviews have been completed and claims data for the 12 months following the beneficiary interviews have been collected. The project was extended for 15 months to allow time for a full set of claims data to accumulate. Data cleaning, analysis, and report writing will be done in the next year. The project is scheduled to end in September 1990.

Capitation and Physiologic Measures of Health

Project No.: 99-C-98489/9-05
Period: May 1986-August 1988
Funding: $ 109,935
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center
(See page 77)
Task Leader: Marian E. Gornick
Division of Beneficiary Studies

Description: This project involved the examination of issues related to capitated financing arrangements under Medicare, particularly those associated with ratesetting methodologies. Researchers for this project studied the degree to which physiological measures of health status can be helpful in predicting expenditures.

Status: The project has been completed. Two works have been produced from this study:

- "Capitation and Medicare," (R-3455-HCFA), published in October 1986, can be obtained from RAND.
- Newhouse, J.P., Manning, W.G., Keeler, E.B., and Sloss, E.M.: Adjusting capitation rates using objective health measures and prior utilization. *Health Care Financing Review*. HCFA Pub. No. 03280. Health Care Financing Administration. Washington. U.S. Government Printing Office, Vol. 10, No. 3, May 1989.

The report highlights some of the problems involved in setting capitated rates. The article is an examination of self-reported, physiologic, demographic, and prior-use variables used to predict subsequent health care expenditures. Prior use was found to be a more powerful predictor of subsequent expenses than any other class of variables.

Geographic Variation and Long-Run Capitation Ratesetting for Medicare Expenditures

Project No.: 99-C-98526/1-05
Period: January 1987-July 1989
Funding: $ 95,274
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: James C. Beebe
Division of Beneficiary Studies

Description: At present, Medicare capitation payments for enrollees in health maintenance organizations are set at a level that reflects existing geographic variations in the fee-for-service payment system. An ideal financing system would reflect geographic differences that are attributable to the cost of delivering appropriate health care services while not reflecting differences in styles of practice that are not associated with health outcomes. This research will decompose geographic variation into components attributable to:

- Differences in input prices.
- Differences in the health status of the population.
- Differences in medical practice associated with local supply structures.
- Unspecified factors associated with differences in medical practice patterns.

These components will be incorporated into a model that could serve to modify Medicare capitation rates.

Status: Analysis and model-building activities are under way. A draft report describing the relationship between discretionary admissions and utilization measures has been received and is being reviewed. The final report, which will provide an econometric analysis of geographic variations in ratesetting, is expected by Spring 1990.

Examination of Alternatives to the Adjusted Average Per Capita Cost Geographic Factor

Project No.: 99-C-98526/1-06
Period: August 1989-July 1990
Funding: $ 59,885
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: James C. Beebe
Division of Beneficiary Studies

Description: The geographic adjuster of the adjusted average per capita cost (AAPCC) is currently a moving 5-year average of the ratio of county costs to national costs. The most recent data entering the 5-year average are 3 years old and the oldest data are 8 years old. Thus, this approach may not accurately reflect a county's current status. In addition, it can result in large random year-to-year fluctuations in the local AAPCCs as well as dampen any trends toward increasing or decreasing relative costs in an area. More sophisticated time series methods, which may give a more accurate estimate of counties' current costs relative to national costs, and Baysian methods of reducing random fluctuations, by combining county data with data from a larger area, will be investigated.

Status: The study is in the early developmental stage.

Continuous Update Diagnostic Cost Group Model

Project No.: 99-C-98526/1-05
Period: May 1988-July 1989
Funding: $ 79,994
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: James C. Beebe
Division of Beneficiary Studies

Description: The purpose of this project is to develop a continuous update diagnostic cost group (DCG) model using monthly cost data. A DCG model is used to determine payments to health maintenance organizations based on classifying each Medicare beneficiary on the basis of past utilization into one of several payment categories. This model categorizes Medicare beneficiaries with different levels of expected future health care costs. Work on the DCG model includes:

- Developing conceptual and analytical approaches for the project.
- Specifying data file construction tasks and file structure.
- Overseeing data file construction by an outside party.
- Checking data quality and consistency.
- Creating analytical files.
- Estimating the basic model using the DCG approach.

Status: A final report, "The Continuous Update Diagnostic Cost Group Model," has been received and is

expected to be available from the National Technical Information Service by Spring 1990.

Clinical Refinement of Diagnostic Cost Group Model

Project No.: 99-C-98526/1-05
Period: May 1988-July 1989
Funding: $ 79,994
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: James C. Beebe
Division of Beneficiary Studies

Description: This project is in conjunction with the work presently taking place on a continuous update diagnostic cost group (DCG) model. The objective of this project was to develop conceptual clinical models for identifying patterns of hospitalization data that can be used to categorize individuals whose continuing needs for health care services will result in higher future costs. A new DCG classification system will be produced and payment rates to health maintenance organizations (HMOs) determined. The resultant model will be compared with past models using previously developed measures of statistical performance. This project, along with the continuous update task, is intended to produce improved formulas for determining payments to HMOs.

Status: A draft final report, "Clinical Refinements to the Diagnostic Cost Group Model," has been received and is currently under review.

Evaluation of Diagnostic Cost Group Pilot Demonstration

Project No.: 500-87-0028
Period: September 1988-June 1990
Funding: $ 118,303
Award: Technical Support:
Evaluation of Demonstrations
(See page 80)
Contractor: Mathematica Policy Research, Inc.
600 Maryland Avenue, SW., Suite 550
Washington, D.C. 20024
Task Leader: Ronald W. Lambert
Division of Health Systems and Special Studies

Description: The diagnostic cost group (DCG) methodology is an experimental health maintenance organization (HMO) payment system that could be used in place of the adjusted average per capita cost (AAPCC) formula currently in use. Unlike the existing AAPCC, which uses only demographic information for setting premium payments to HMOs, the DCG approach also uses diagnostic information from the previous year's hospitalizations of the HMO's current enrollees to determine Medicare payments to the HMO for the current year. The conceptual justification for the method is that certain reasons for hospitalization are predictably associated with higher levels of future health care needs. The technical support contract consists of two phases. The first phase is the development of an experimental design for the expanded demonstration (a follow-on initiative to the pilot). This will address how the expanded demonstration is to be designed. The second phase is the pilot evaluation. The purpose of the pilot is to assess the operational issues involved in conducting a demonstration of the DCG payment methodology.

Status: The first phase has been completed. A final report was received in June 1989. The pilot demonstration and second phase of the project began in August 1989 with sites in Maryland, Minnesota, and New York. In 1990, additional sites may be added. The second phase is expected to be completed in June 1990.

A Time-Dependent Diagnostic Cost Group Reimbursement Model for Medicare Health Maintenance Organization Enrollees

Project No.: 99-C-98526/1-06
Period: August 1989-July 1990
Funding: $ 66,111
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: James C. Beebe
Division of Beneficiary Studies

Description: The diagnostic cost group (DCG) is a proposed alternative payment mechanism to the adjusted average per capita cost method for reimbursing health maintenance organizations (HMOs) for services furnished to their enrolled Medicare beneficiaries. In addition to using age, sex, and welfare status in ratesetting calculations, the DCG model uses hospital diagnostic information to set HMO rates. Proponents believe the DCG model improves the accuracy of HMO payment levels. Recent research is also showing that the recentness of a hospitalization is an important factor influencing costs. The current DCG payment system does not adjust HMO payments to reflect these differences in the time patterns of different diseases. This project, therefore, would significantly extend the DCG model by incorporating the amount of elapsed time since a hospitalization as an explanatory variable in predicting future costs. Researchers believe that taking into account these diverse patterns could potentially lead to further improvements in the way in which HMO premiums would be calculated using the DCG model.

Status: The study is in the early developmental stage.

Working Aged Beneficiaries: Program Impacts and Implications for the Adjusted Average Per Capita Cost

Project No.: 99-C-99168/3-02
Period: August 1989-July 1990
Funding: $ 65,051
Award: Cooperative Agreement
Awardee: Project Hope Research Center
(See page 79)

Task Leader: James C. Beebe
Division of Beneficiary Studies

Description: Because Medicare is the secondary payer for aged persons who are covered by employer medical insurance, the Health Care Financing Administration does not get complete data on the beneficiaries' medical care use and costs. As a result, the health care costs for the working aged are not fully reflected in the calculations that are made to generate the capitated payments to health maintenance organizations (HMOs) under Medicare. HMOs believe that the lack of complete data on the working aged individuals unfairly lowers their capitation rates for all enrollees, given the current method for computing the rates. The Regional Data Exchange System files and the Health Interview Survey will be used to attempt to determine the legitimacy and magnitude of the problem and corrective measures that may be necessary.

Status: The study is in the early developmental stage.

Impacts of the Working Aged on Medicare Expenditure Rates

Project No.: 99-C-98526/1-06
Period: August 1989-July 1990
Funding: $ 54,774
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: James C. Beebe
Division of Beneficiary Studies

Description: Because Medicare is the secondary payer for aged persons who are covered by employer medical insurance, the Health Care Financing Administration does not get complete data on the beneficiaries' medical care use and costs. As a result, the health care costs for the working aged are not fully reflected in the calculations that are made to generate the capitation payments to health maintenance organizations (HMOs) under Medicare. HMOs believe that the lack of complete data on the working aged individuals unfairly lowers their capitation rates for all enrollees, given the current method for computing the rates. The Regional Data Exchange System files that will be developed by Project Hope and the Current Population Survey will be used to attempt to determine the legitimacy and magnitude of the problem and any corrective measures in the ratesetting process that may be necessary.

Status: The study is in the early developmental stage.

The Working Aged

Funding: Intramural
Project Director: Alma B. McMillan
Division of Beneficiary Studies

Description: Recent legislative changes made Medicare benefits secondary to those payable under employer group health plans for employed persons 65 years of age or over and the spouses 65 years or over of any employed persons who work for businesses that have 20 or more employees. There is no information on the precise number of working aged or their Medicare use, but the Bureau of Program Operations (BPO), Health Care Financing Administration, estimates that there are about one million working aged for whom Medicare is the secondary payer. The number of working aged and their use of Medicare services will be estimated in this study. Good data on this group would improve calculations of program utilization rates, such as hospital discharge rates, and could also be used to improve calculations for the adjusted average per capita cost payments for health maintenance organizations.

Status: BPO has established a regional data exchange system on persons for whom Medicare is the secondary payer. This data system will be the basis for identifying the working aged, and an update through September 1988 is now available. The contents of the file will be examined to determine if it should be linked with Medicare utilization data to permit analytical studies for this group.

Medicare Insured Groups

Amalgamated Medicare Insured Group

Project No.: 95-C-99171/2-01
Period: October 1987-December 1990
Funding: $ 222,992
Award: Cooperative Agreement
Awardee: Amalgamated Life Insurance Company
770 Broadway
New York, N.Y. 10003
Project Officer: Ronald W. Deacon
Division of Health Systems and Special Studies

Description: The Amalgamated Medicare Insured Group (AMIG) is being developed by the Amalgamated Life Insurance Company, administrators of trust funds for the Amalgamated Clothing and Textile Workers Union. The AMIG project will unify all aspects of program administration, including Medicare Parts A and B and Medicare supplemental benefits, under the auspices of Amalgamated Life. Funding will be provided through a capitated rate paid by the Health Care Financing Administration (95 percent of the adjusted average per capita cost), employer contributions, and enrollee premiums. By using managed health care systems and provider negotiation leverage resulting from a large retiree population, the AMIG is expected to reduce the cost to all payers.

Status: The AMIG project will begin in Philadelphia, where it will offer enrollment to the approximately 8,000 retirees and spouses residing in the area. Amalgamated Life expects to complete development of its health care delivery system by Spring 1991. The AMIG anticipates enrollment of 1,000 within the first year of operation, eventually reaching 3,500 by the end of the demonstration. If the concept proves successful, Amalgamated Life expects to add other sites to the

demonstration. Possible sites are New York and Baltimore.

Chrysler United Automobile, Aerospace, and Agricultural Implement Workers Medicare Insured Group Research and Demonstration Project

Project No.: 95-C-99331/5-01
Period: March 1988-August 1989
Funding: $ 225,835
Award: Cooperative Agreement
Awardee: Chrysler Motors Corporation
Health Care and Group Insurance
12000 Chrysler Drive
Highland Park, Mich. 48288
Project Officer: Ronald W. Deacon
Division of Health Systems and Special Studies

Description: Chrysler Motors Corporation and the International Union, United Automobile, Aerospace, and Agricultural Implement Workers proposed to develop a Medicare insured group (MIG) to deliver Medicare and supplemental health benefits to Chrysler retirees. The first phase was a feasibility assessment in which Chrysler analyzed historical cost and utilization data on its members to ascertain the potential for cost savings under a MIG. Included were simulations of managed care techniques expected to be administered under a MIG concept. If Chrysler determines that the MIG concept is economically viable, it will then proceed to a second phase (operational protocol development).

Status: The feasibility assessment phase was completed, at which time Chrysler decided not to implement a MIG demonstration. The main reasons supporting the decision were:

- *Price.* A Chrysler MIG would be unlikely to do as well as Medicare's provider payment levels because it would lack Medicare's market power.
- *Savings.* Estimated savings of 3.8 percent fall short of the Health Care Financing Administration's 5-percent retention under the Omnibus Budget Reconciliation Act law payment formula.
- *Administration.* A Chrysler MIG could only achieve operating cost levels as low as Medicare's after many years and substantial administrative investments.

A report on the results of the feasibility analyses has been completed.

Southern California Edison Company Medicare Insured Group Research and Demonstration Project

Project No.: 95-C-99355/9-01
Period: February 1989-March 1991
Funding: $ 195,825
Award: Cooperative Agreement
Awardee: Southern California Edison Company
8631 Rush Street
Rosemead, Calif. 91770
Project Officer: Ronald W. Deacon
Division of Health Systems and Special Studies

Description: Southern California Edison (SCE) is a self-insured employer offering health benefits to its retired employees. It operates eight primary care clinics and a large corporate pharmacy. During the feasibility phase, SCE will analyze historical costs of providing Medicare and supplemental benefits to its retirees and eligible dependents. The information will be used to develop experienced-based payment rates which will be reviewed by the Health Care Financing Administration. SCE will develop a retiree benefit package, encounter data reporting system, and a marketing plan to voluntarily enroll as many retirees as possible. This project is mandated by Congress under the Omnibus Budget Reconciliation Act of 1987.

Status: SCE is currently developing a ratesetting methodology and is analyzing historical utilization using Medicare claims data. By October 1990, SCE plans to determine if the Medicare insured group concept is feasible and if so will proceed to develop operational procedures to begin a demonstration by January 1993.

Medicare Insured Group Ratesetting

Project No.: 99-C-98489/9-05
Period: May 1987-July 1989
Funding: $ 108,576
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center
(See page 77)
Task Leader: Ronald W. Lambert
Division of Health Systems and Special Studies

Description: This project involved the development of a ratesetting methodology to be applied to the Medicare insured groups (MIGs). The MIG concept consists of an employer group assuming risk for the benefits of its Medicare beneficiaries. The employer group is to be paid a capitated rate for assuming this risk in the same fashion that health maintenance organizations are paid an adjusted average per capita cost. The purpose of this project was to design an experience-based ratesetting methodology on which to base this capitated rate.

Status: The project has been completed. The final report, "Credibility Methods for Setting Insurance Premiums," was received from RAND in May 1989 and is available from the National Technical Information Service, accession number PB89-223390.

Health Maintenance Organizations and Competitive Medical Plans Evaluation and Monitoring

Medicare Payments to Health Maintenance Organizations: Beyond a Local Fee-For-Service Methodology

Project No.: 17-C-99223/3-02
Period: August 1989-July 1990
Funding: $ 126,770
Award: Cooperative Agreement
Awardee: The Urban Institute
Health Policy Center
2100 M Street, NW.
Washington, D.C. 20037
Project Officer: James C. Beebe
Division of Beneficiary Studies

Description: This project will investigate whether favorable selection by health maintenance organizations (HMOs) in areas of high HMO penetration affects the health status and cost of those Medicare beneficiaries remaining in the fee-for-service sector. If it does, capitation rates set for HMO enrollees may be too high. If such an effect is found, alternatives to current methods for setting capitation rates in high-penetration areas will be explored.

Status: Preliminary findings indicate that HMO enrollment decreases Medicare expenditures. Validation of this finding is in progress.

Tax Equity and Fiscal Responsibility Act of 1982 Health Maintenance Organization and Competitive Medical Plan Program Evaluation

Project No.: 500-88-0006
Period: February 1988-February 1992
Funding: $ 3,509,701
Award: Contract
Contractor: Mathematica Policy Research, Inc.
P.O. Box 2393
Princeton, N.J. 08543
Project Officer: James P. Hadley
Division of Health Systems and Special Studies

Description: The evaluation, which will be conducted over a period of 4 years, is designed to examine the impact of the program on the Health Care Financing Administration (HCFA), health care providers, and Medicare beneficiaries. Fifty to 100 plans are included in the evaluation (depending on the area of analysis). The primary analyses to be included in the evaluation relate to:

- Health maintenance organization (HMO) and competitive medical plan (CMP) impacts on enrollee use and cost of service.
- The quality of care delivered by the HMOs and CMPs.
- Factors contributing to the beneficiary enrollment decision.
- Impacts of the program on both the HMO and fee-for-service markets.
- HMO operational issues, with a focus on plan viability.

Data for the analyses will come from site visit interviews, HMO files, HCFA data files, and a beneficiary survey. Results from the evaluation will be summarized in annual reports at the end of each of the first 3 years of the study. Details of the research methodology and results will be included in a series of technical reports that relate to specific study topics.

Status: The first year of the evaluation focuses on an examination of the availability of HMO data systems, an analysis of HMO disenrollment patterns, and a descriptive analysis of the HMOs participating in the Tax Equity and Fiscal Responsibility Act (TEFRA) program. The following reports have been produced and will be available from the National Technical Information Service in early 1990:

- "The Availability of HMO/CMP Data on the Service Utilization and Cost of Medicare Members."
- "Organizational and Operational Characteristics of TEFRA HMOs and CMPs."
- "First Annual Report on the TEFRA HMO and CMP Evaluation."

Marketing Strategies and Risk Selection in the Tax Equity and Fiscal Responsibility Act Health Maintenance Organizations

Project No.: 17-C-99070/5-02
Period: June 1987-October 1989
Funding: $ 843,000
Award: Cooperative Agreement
Awardee: University of Michigan
School of Public Health
Department of Health Services Management and Policy
109 Observatory
Ann Arbor, Mich. 48109
Project Officer: Ruth B. Pickard
Division of Health Systems and Special Studies

Description: This project involved investigating the relationship between marketing activities, consumer choice, and biased selection in the Tax Equity and Fiscal Responsibility Act health maintenance organizations (HMOs). Twenty-two geographically dispersed HMOs selected by model, maturity, market penetration, and type of marketing activities participated in the study. Five categories of marketing activities—product, place, price, promotion, and enrollment process—were characterized through interviews with marketing personnel and content analysis of all promotional materials. The study involved surveying approximately 300 enrollees and a similar-sized comparison group for each HMO in order to relate these

marketing variables to the self-identified health statuses of beneficiaries as well as to their enrollment decisions.

Status: All data collection and analyses have been completed. Initial findings indicate that none of the studied HMOs experienced adverse health selection, that enrollees and nonenrollees differ on the importance of various benefit offerings, and that HMOs do not appear to be making systematic efforts to enroll only healthier Medicare beneficiaries. To date, the researchers have presented early results of the study at the 1989 Annual Meeting of the Foundation for Health Services Research, the 1989 Annual Meeting of the Group Health Association of America (GHAA), and the 1989 Annual Meeting of the Public Health Association. They have also published a paper arising from the study, which compares the Health Care Financing Administration's method of counting HMO enrollments with that of InterStudy as a "Commentary" in the Winter 1988 issue of *GHAA Journal*. A final report was received in late 1989.

Study of the Health Maintenance Organizations That Have Not Renewed Their Tax Equity and Fiscal Responsibility Act Risk Contracts

Project No.: 99-C-98526/1-06
Period: May 1987-December 1988
Funding: $ 124,573
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: Ruth B. Pickard
Division of Health Systems and Special Studies

Description: This study used both qualitative and quantitative analyses to investigate why some health maintenance organizations (HMOs) and competitive medical plans decided not to renew their active Tax Equity and Fiscal Responsibility Act risk contracts. Case studies were done of seven HMOs selected from among those failing to renew their contracts at the end of calendar year 1987. In addition, nationally representative data sources were used to examine the fiscal experience of all existing risk contract plans in order to study the importance of organizational and market-level variables in renewal decisions.

Status: The final report, "HMOs That Did Not Renew Their TEFRA Risk Contracts for 1988," was received in July 1989 and is available from the National Technical Information Service, accession number PB89-229496. Nonrenewing plans reporting large financial losses almost always attributed losses to inadequate Medicare payment rates. However, the researchers concluded that the poor financial experience of HMOs, which led to nonrenewal, was more closely related to issues surrounding HMO costs than to arbitrarily low Medicare payment rates. Factors identified by the study to be associated with excessive financial losses and contract nonrenewal were:

- Being an individual practice association model HMO.
- Being a former Medicare demonstration site.
- Having a relatively high proportion of Medicare enrollees who were categorically disabled.
- Having relatively higher member premiums.
- Having dropped previously offered prescription drug benefits.
- Being in areas of relatively low Medicare payment rates.
- Having relatively rapid increases in cost projections.
- Having relatively greater proportions of Medicare enrollees living in rural counties.

Post-Health Maintenance Organization Disenrollment Utilization Study

Funding: Intramural
Project Officer: Ruth B. Pickard
Division of Health Systems and Special Studies

Description: This study is an examination of all disenrollments from 38 risk contract health maintenance organizations (HMOs) during the first year of the Tax Equity and Fiscal Responsibility Act implementation. Utilization experience during the months following disenrollment is being studied for indications of selective disenrollment patterns. Use, cost, and mortality data for the period May-December 1985 form the basis for comparisons between pre- and post-disenrollment utilization patterns of the study group and those of two matched comparison groups: beneficiaries having continuous HMO enrollment and those in the fee-for-service sector.

Status: Person-level files have been created from the bill-level cost and use records of beneficiary experience with HMOs. Initial findings indicate that beneficiaries who join and then leave HMOs, although incurring slightly lower costs during the first year following disenrollment than those who never enrolled, are more likely to seek immediate inpatient care and to die during that period than are those in the comparison groups. Current investigation is focusing on sorting out the effects on these results of various demographic and prior experience factors. A presentation of initial study findings was given at the 1988 Annual Meeting of the American Public Health Association.

Mortality Levels Among Aged Medicare Tax Equity and Fiscal Responsibility Act Health Maintenance Organization Enrollees

Funding: Intramural
Project Officer: Gerald F. Riley
Division of Beneficiary Studies

Description: This study will be part of the Office of Research and Demonstrations' evaluation of the Tax Equity and Fiscal Responsibility Act health maintenance organization (HMO) program. It will produce an analysis of mortality patterns among aged Medicare-risk HMO and competitive medical plan enrollees, as a

measure of health status differences between HMO and fee-for-service beneficiaries. The focus of this study will be a cross-sectional analysis of HMO mortality patterns in 1987, the most recent time period for which data are available. Mortality in each of 108 plans will be compared with the mortality experience of local Medicare fee-for-service beneficiaries, controlling for demographic characteristics included in the adjusted average per capita cost.

Status: Analyses have been received and a draft report is being reviewed.

Technical Advisory Panel: Health Maintenance Organization Research-Setting Agenda for Understanding the Industry

Project No.: 99-C-99169/5-02
Period: July 1989-January 1990
Funding: $ 30,328
Award: Cooperative Agreement
Awardee: University of Minnesota Research Center
(See page 79)
Task Leader: Ronald W. Deacon
Division of Health Systems and Special Studies

Description: To better understand the health maintenance organization (HMO) industry and the rapid changes that the industry is undergoing, the Health Care Financing Administration (HCFA) established a Technical Advisory Panel (TAP) to develop a research agenda. To provide background for this TAP and to develop a meeting agenda in advance, HCFA requested the assistance of several technical experts through the University of Minnesota Research Center. The technical experts were requested to:

- Prepare background papers.
- Develop a meeting agenda and workplan.
- Co-chair the TAP meeting.
- Prepare an agenda for research on the HMO industry based on the background papers and the consensus of the TAP.

Status: The technical experts prepared drafts of two background papers for the TAP meeting:

- Langwell, K.M.: "Operational, Organizational, and Management Aspects of HMOs: Implications for Performance and Participation in Public Programs."
- Morrison, E.M., and Luft, H.S.: "Competition and Market Structures in the HMO Industry."

The TAP meeting was held in September 1989. The technical experts have prepared a draft proposal for a research agenda that will be reviewed by all TAP members. A final research agenda is expected in early 1990.

Other Studies

Capitation Payment System for All End Stage Renal Disease Services

Project No.: 95-C-98497/9-02
Period: January 1985-April 1988
Funding: $ 424,426
Award: Cooperative Agreement
Awardee: El Camino Hospital District Corporation
2500 Grant Road
Mountain View, Calif. 94042
Project Officer: Bonnie M. Edington
Division of Health Systems and Special Studies

Description: The purpose of this project was to develop and test the concept of a disease management organization under which capitation payments would cover all Medicare benefits for end stage renal disease (ESRD) patients.

Status: The project had 3 years of planning and development, and concluded when implementation proved to be infeasible. The awardee was unable to recruit the necessary number of providers to show that it would be cost effective to change the method of reimbursement under the Medicare program for ESRD patients. Without adequate support for the approach, as designed, it was decided not to proceed with the implementation of the demonstration. A final report is expected by Spring 1990.

Capitated Community Nursing Organizations

Project No.: 99-C-99168/3-02
Period: August 1988-July 1990
Funding: $ 200,593
Award: Cooperative Agreement
Awardee: Project Hope Research Center
(See page 79)
Task Leader: Marvin A. Feuerberg
Division of Long-Term Care Experimentation

Description: The purpose of this project is to assist the Health Care Financing Administration in designing a project under Section 4079 of the Omnibus Budget Reconciliation Act of 1987 to provide Medicare payment on a prepaid, capitated basis to community nursing organizations. The detailed planning and implementation of the general requirements of the congressional mandate have to be undertaken. This includes: developing site selection criteria, soliciting applications for participation in the project from eligible organizations, determining quality assurance mechanisms and marketing strategies appropriate for

these sites, assisting in evaluating proposals, selecting demonstration sites, and developing an evaluation strategy.

Status: Development activities are still under way. Implementation of the demonstration will begin in 1990 after the completion of these activities.

Alternatives to Fee-For-Service as a Base for Health Maintenance Organization Premium Setting

Project No.: 99-C-99169/5-02
Period: August 1989-July 1990
Funding: $ 54,939
Award: Cooperative Agreement
Awardee: University of Minnesota Research Center
(See page 79)
Task Leader: James C. Beebe
Division of Beneficiary Studies

Description: Currently, health maintenance organizations (HMOs) that enroll Medicare beneficiaries under the Tax Equity and Fiscal Responsibility Act risk contracts are reimbursed 95 percent of eligible costs the enrollees would have incurred if they had remained in the fee-for-service (FFS) sector. This approach of linking HMO payments to FFS costs has been criticized by some individuals both on conceptual and technical grounds. The purpose of this project, therefore, is to develop and analyze alternative methods of reimbursing HMOs for their care of Medicare beneficiaries. The product of the research will be a conceptual report to be delivered by July 1990.

Status: The study is in the early developmental stage.

Program for Prepaid Managed Health Care

Project No.: 11-P-98715/3-03
Period: August 1985-January 1989
Award: Grant
Grantee: Maryland Department of Health and Mental Hygiene
201 West Preston Street
Baltimore, Md. 21201
Project Officer: John F. Meitl
Division of Health Systems and Special Studies

Description: This project involves 2 of the 13 program sites funded under the Robert Wood Johnson Foundation/Health Care Financing Administration program for prepaid managed health care. The program is cosponsored by the National Governors' Association. It is designed to enable medical institutions, working with State and Federal governments and private health insurers, to develop more efficient arrangements for the financing and delivery of health services. This Medicaid project utilizes capitation payment and case management and offers 12 months of guaranteed eligibility as a participation incentive. The two sites are the Chesapeake Health Plan (CHP) and the Johns Hopkins Health Plan (JHHP), both in Baltimore, Maryland.

Status: Enrollment with the 12 months of guaranteed eligibility began at JHHP in February 1986 and at CHP in March 1986. The final year of the demonstration ended on January 31, 1989. Neither CHP nor JHHP participated in the partial randomization evaluation design that is being conducted by the RAND Corporation. A final report has been received and is being reviewed.

Health Care Plus: The Lutheran Medical Center Program for Prepaid Managed Health Care

Project No.: 11-P-98716/2-03
Period: August 1985-June 1989
Award: Grant
Grantee: New York Department of Social Services
40 North Pearl Street
Albany, N.Y. 12243
Project Officer: John F. Meitl
Division of Health Systems and Special Studies

Description: This is 1 of 13 program sites funded under the Robert Wood Johnson Foundation/Health Care Financing Administration program for prepaid managed health care. The program is cosponsored by the National Governors' Association. It is designed to enable medical institutions, working with State and Federal governments and private health insurers, to develop more efficient arrangements for the financing and delivery of health services. The Medicaid project utilizes capitation payment and case management and offers 6 months of guaranteed eligibility as a participation incentive. The Lutheran Medical Center is a teaching hospital that serves the residents of the Sunset Park neighborhood of Southwest Brooklyn, New York.

Status: The State implemented the waivers for this program on July 1, 1986. The third year of the project's 3-year operational phase has been completed. As of June 30, 1989, the final number of recipients that were enrolled in the program was 2,788. New York participated in the partial randomization evaluation design that is being conducted by the RAND Corporation. Analyses that focus on selection and ratesetting issues are in progress. Additional analyses comparing plan and fee-for-service use during the first year of enrollment and outcomes after 6 months of enrollment are also planned.

Evaluation of the Prepaid Managed Health Care Demonstration

Project No.: 99-C-98489/9-06
Period: September 1985-July 1990
Funding: $ 2,142,206
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center
(See page 77)
Task Leader: Arne H. Anderson
Division of Health Systems and Special Studies

Description: The RAND Corporation is conducting an independent evaluation of the cost effectiveness of the prepaid managed health care demonstration. This demonstration project is being sponsored jointly by the Robert Wood Johnson Foundation, the National Governors' Association, and the Health Care Financing Administration. The demonstration is designed to enable health care providers to develop more efficient arrangements for the financing and delivery of health services. Most projects will be limited to Medicaid and will utilize prospective payment and case management.

Status: The RAND Corporation is focusing its evaluation on two sites, Lutheran Medical Center, Brooklyn, New York, and Jackson Memorial Hospital, Miami, Florida. The key element of RAND's research design is the random assignment of Medicaid clients to either the health maintenance organization demonstration or the fee-for-service setting. Approximately 680 Aid to Families with Dependent Children families per site were to participate in the random assignment process. All clients have been enrolled in the study and their health care expenditures are being monitored. Several interim reports have been received and are being reviewed. A final cost-effectiveness report is expected in Fall 1990.

Evaluation of HealthChoice, Inc.—Independent Broker

Project No.: 500-87-0028
Period: October 1987-September 1989
Funding: $ 163,938
Award: Technical Support: Evaluation of Demonstrations (See page 80)
Contractor: Mathematica Policy Research, Inc.
P.O. Box 2393
Princeton, N.J. 08543-2393
Task Leader: Robin J. Brocato
Division of Health Systems and Special Studies

Description: The HealthChoice, Inc. (HCI) demonstration in San Francisco and Los Angeles was initiated in 1985 to determine whether an independent broker, working cooperatively with participating health maintenance organizations (HMOs), could be an effective mechanism for disseminating information and increasing Medicare beneficiaries' understanding of their health care alternatives. The purpose of the evaluation of HCI is to assess the effectiveness of HCI through an indepth case study of HCI and HMO participants; to examine the impacts of HCI on beneficiary awareness, enrollment, and disenrollment rates; and to determine the nature and extent of biased selection in Medicare HMOs. The following questions are addressed in the evaluation:

- Is the broker concept feasible?
- To what extent has the demonstration increased beneficiary awareness and understanding of Medicare HMOs?
- What was the impact of the demonstration on Medicare HMO enrollment and disenrollment rates?
- What was the impact of the demonstration on the nature and extent of biased selection in Medicare HMOs?
- How was the broker concept implemented in each market? What were the strategies and experiences of HCI and participating HMOs during the planning and implementation phase, and what were the perceptions and reactions of other market participants?

Status: The final evaluation report has been completed. Overall, the results of the evaluation of the impacts of the HCI demonstration suggest that the program was not successful in Los Angeles and San Francisco. However, a comparison of knowledge of key HMO concepts showed an increase in understanding for beneficiaries who attended sponsored health fairs in Los Angeles. The report is available from the National Technical Information Service, accession number PB90-113515.

Planning Grant for a Medicare Buy-Right Demonstration

Project No.: 95-C-99117/5-01
Period: June 1987-September 1988
Funding: $ 70,000
Award: Cooperative Agreement
Awardee: Center for Policy Studies
2221 University Avenue, SE., Suite 134
Minneapolis, Minn. 55414
Project Officer: Ronald W. Deacon
Division of Health Systems and Special Studies

Description: The buy-right concept is designed to assist Medicare beneficiaries and Medicare retiree group insurers to assess the quality and efficiency of health care providers, and to provide beneficiaries and group insurers with appropriate information and incentives to choose providers that are rated high in quality and cost efficiency. The original scope of this award was for planning activities necessary to conduct a Medicare buy-right demonstration, including designing the methodology to assess quality, selecting an experimental and control group, and developing provider contracts. The implementation phase would be covered by future competitively awarded cooperative agreements. This planning/designing study was related to similar work that the Center for Policy Studies was doing in the private health insurance sector. Early in the Medicare demonstration design phase, it became obvious that it was premature to conduct a Medicare buy-right demonstration. Consequently, the Center for Policy Studies focused its attention on investigating issues of inpatient quality of care measurements.

Status: A final report will be available by Spring 1990. The report will explore methods for improving measures of provider quality of care and efficiency by determining the feasibility of integrating population-based rates of utilization (macro-level analysis) with

corresponding measures of per-case resource consumption and outcomes (micro-level analysis).

Social Health Maintenance Organization Project for Long-Term Care

Period: August 1984-September 1992
Award: Grants
Project Officers: William D. Clark and Robin J. Brocato
Division of Long-Term Care Experimentation
Division of Health Systems and Special Studies

Description: In accordance with the congressional mandate (Public Law 98-369, Section 2355), this project developed and is currently implementing the concept of a social health maintenance organization (S/HMO) for acute and long-term care. A S/HMO integrates health and social services under the direct financial management of the provider of services. All services are provided by or through the S/HMO at a fixed annual prepaid capitation sum. The demonstration has been extended through 1992 by Section 4018 of Public Law 100-203.

Status: Four S/HMO demonstration sites include two HMOs that have added long-term care services to their service packages and two long-term care providers that have added acute care services to their service packages. The sites have developed a common service package, financing plans, and risk-sharing arrangements. The demonstration sites utilize Medicare and Medicaid waivers. All four sites initiated service delivery by March 1985. During the first 30 months of operations, the Federal and State governments shared financial risk with the sites. This risk sharing ended August 31, 1987. The S/HMO sites are:

Elderplan, Inc.
Project No.: 95-P-09101/2-03
Grantee: Elderplan, Inc.
1276 50th Street
Brooklyn, N.Y. 11219
Project Officer: William D. Clark

Senior Plus
Project No.: 95-P-09102/5-03
Grantee: Group Health Inc. and Ebenezer Society
2829 University Avenue, SE.
Minneapolis, Minn. 55414
Project Officer: Robin J. Brocato

Medicare Plus II
Project No.: 95-P-09103/0-03
Grantee: Kaiser-Permanente Center for Health Research
4610 Southeast Belmont Street
Portland, Ore. 97215-1795
Project Officer: Robin J. Brocato

SCAN Health Plan
Project No.: 95-P-09104/9-03
Grantee: Senior Care Action Network
521 East Fourth Street
Long Beach, Calif. 90802
Project Officer: William D. Clark

An evaluation is being performed by the Aging Health Policy Center at the University of California, San Francisco.

Status: An interim Report to Congress, "Evaluation of the Social/Health Maintenance Organization Demonstration," has been released. A copy of the report is available from the National Technical Information Service, accession number PB89-215446. The evaluation and data collection plan for the demonstration is also available as a technical appendix, accession number PB89-191779. The following publications have also been produced:

- The social HMO demonstration: Early experience. *Health Affairs*. Vol. 7, No. 3, Summer 1988.
- The social health maintenance organization. *Caring for the Elderly*. Baltimore, Maryland. Johns Hopkins University Press, 1989.
- Long-term care insurance: Will it sell? *Business and Health*. Vol. 4, No. 11, November 1986.
- The social health maintenance organization and long-term care. *Generations*. Vol. 9, No. 4, Summer 1985.
- The national social health maintenance organization demonstration. *Journal of Ambulatory Care Management*. Vol. 8, No. 4, September 1985.
- The social health maintenance organization: A vertically integrated prepaid care delivery system for the elderly. *Health Care Financial Management*. Vol. 38, No. 10, October 1984.
- The social health maintenance organization and its role in reforming the long-term care delivery system. *Conference Proceedings: Long-Term Care Financing and Delivery Systems: Exploring Some Alternatives*. HCFA Pub. No. 03174. Health Care Financing Administration, June 1984. Order from the National Technical Information Service, accession number PB89-100119.
- *Changing Health Care for the Aging Society: Planning For The Social Health Maintenance Organization*. Lexington, Maine. Lexington Books, 1985.

Evaluation of Social Health Maintenance Organization Demonstrations

Project No.: 500-85-0042
Period: September 1985-November 1990
Funding: $ 3,547,934
Award: Contract
Contractor: University of California, San Francisco
Center for Health and Aging
San Francisco, Calif. 94143

Project Officer: William D. Clark
Division of Long-Term Care Experimentation

Description: The social health maintenance organization (S/HMO) seeks to enroll, voluntarily, persons 65 years of age or over in an innovative prepaid program that integrates medical, social, and long-term care delivery systems. The S/HMO merges the health maintenance organization concepts of capitation financing and provider risk sharing developed by the Health Care Financing Administration (HCFA) under its Medicare capitation and competition demonstrations with the case management and support services concepts underlying the Department of Health and Human Services (DHHS)-sponsored long-term care demonstrations serving the chronically ill aged. Preliminary evaluation results were submitted to Congress (mandated by Public Law 98-369) and will be used by HCFA and DHHS to assess whether the S/HMO concept should be fostered through changes in prepaid Medicare contracting regulations.

Status: This contract was awarded in September 1985. An interim Report to Congress was forwarded in August 1988. A copy of the report, "Evaluation of the Social/Health Maintenance Organization Demonstration," may be obtained from the National Technical Information Service, accession number PB89-215446; the evaluation and data collection plan for the demonstration is available as a technical appendix, accession number PB89-191779. The data collection phase has been completed. Data analysis will be completed, and the final report will be written by November 1990.

Minnesota Prepaid Medicaid Demonstration

Project No.: 11-C-98223/5-05
Period: June 1982-June 1990
Funding: $ 349,421
Award: Cooperative Agreement
Awardee: Minnesota Department of Public Welfare
2nd Floor—Space Center
444 Lafayette Road
St. Paul, Minn. 55101
Project Officer: Ronald W. Deacon
Division of Health Systems and Special Studies

Description: Minnesota was awarded a cooperative agreement to develop a prepaid capitation demonstration project for the eligible Medicaid population in three counties: one urban, Hennepin; one suburban, Dakota; and one rural, Itasca. For all counties, the per capita payment will be calculated based on the average fee-for-service cost per eligible in the program in each county. This rate will be paid to competing health plans that organize to provide services to Medicaid recipients within the urban and suburban counties. A rate-cell approach is being used to pay capitation rates. The cells incorporate adjustments for age, sex, category of eligibility, county of residence, and institutional and Medicare status. The capitation rate for Aid to Families with Dependent Children (AFDC) recipients will be 90 percent of the fee-for-service costs. For Supplemental Security Income recipients, the rate will be 95 percent of the fee-for-service costs. The demonstration plans to enroll the AFDC, Aged, Blind, and Disabled, including mentally retarded and mentally ill populations, in prepaid health plan arrangements. In Hennepin County, an experimental group consisting of 35 percent of the Medicaid population will be randomly selected to participate in the project. In Dakota County, the mental health/chemical dependency portion of the rate will be broken out and paid separately to the county. The county has chosen to bear both the risk and responsibility of providing these services. The rural county will not have competing plans. The capitation will go to Itasca County, which has contracted with Health Maintenance Organization of Minnesota for claims processing and management services. Health Maintenance Organization of Minnesota will coordinate the case management and utilization controls and supervise local providers in delivering services to the Medicaid population.

Status: The State submitted an operational protocol that was approved by the Health Care Financing Administration in September 1985. The implementation phase began in Itasca County in September 1985 and in Hennepin and Dakota Counties in December 1985. There are presently five participating competing plans in Hennepin and Dakota Counties. Initial enrollment was slower than anticipated because of failure of recipients to make choices (30-percent assignment rate); however, enrollment is now at 25,000. This project is included in an evaluation conducted by Research Triangle Institute. The demonstration was scheduled to end in December 1988, but it was extended until June 1990 by Congress.

Municipal Health Services Program

Period: August 1979-December 1993
Participants: Baltimore, Md.
Cincinnati, Ohio
Milwaukee, Wis.
San Jose, Calif.
Project Officer: Robin J. Brocato
Division of Health Systems and Special Studies

Description: Development of the Municipal Health Services Program (MHSP) was a collaborative effort of four major cities in four States, the U.S. Conference of Mayors, the Robert Wood Johnson Foundation (RWJF), and the Health Care Financing Administration (HCFA). It was initiated by RWJF through grants of $3 million awarded in June 1978 to each of the following four cities: Baltimore, Cincinnati, Milwaukee, and San Jose. HCFA joined in the project by providing Medicare and Medicaid waivers to test the effects of increased utilization of municipal health centers by:

- Eliminating coinsurance and deductibles.

- Expanding the range of covered services.
- Paying the cities the full cost of delivering services at the clinics.

The intent of the waivers is to shift fragmented utilization away from costly hospital emergency rooms and outpatient departments toward lower cost MHSP clinics that would provide beneficiaries with comprehensive primary and preventive health care.

Status: HCFA contracted with the University of Chicago's Center for Health Administration Studies (CHAS) to perform a detailed evaluation of cost and utilization. CHAS determined in its final evaluation report that the MHSP improved access to health services. The analysis also indicated that MHSP clients in the Medicare program had significantly lower inpatient and total health care expenditures than a comparison group, after adjusting for predisposing, enabling, and need variables. Since 1986, the MHSP has experienced a significant increase in both costs and utilization. The 1987 fiscal year costs were $27 million, as compared with $14 million in fiscal year 1985. Approximately 29,000 individuals were served in 1987. Currently, HCFA is undertaking an intramural study to analyze programmatic trends. MHSP waivers were scheduled to terminate on December 31, 1984; however, HCFA agreed to extend the Medicare waivers 1 additional year, through December 1985. Since that time, the sites have sought and obtained the passage of legislation enabling the demonstrations to continue. The program is scheduled to terminate December 31, 1993.

Florida Alternative Health Plan Project

Project No.: 11-C-98231/4-06
Period: June 1982-December 1989
Funding: $ 729,114
Award: Cooperative Agreement
Awardee: State of Florida
1317 Winewood Boulevard
Tallahassee, Fla. 32301
Project Officer: Ronald W. Deacon
Division of Health Systems and Special Studies

Description: The State of Florida developed and implemented an alternative health plan demonstration to provide a continuum of health care and social support services to frail elderly Medicaid recipients. Mt. Sinai Medical Center in Miami provides comprehensive health services to enrolled Medicaid recipients. In cooperation with several community affiliations, it provides outreach services to the community that include transportation, personal emergency response, in-home and community social and medical care, home assessment, and health education and prevention training. Eligible clients are those Medicaid recipients who are at risk of nursing home placement and could live in the community if a full range of coordinated services were made available to them. Mt Sinai is paid a capitation rate set at 98 percent of an equivalent fee-for-service amount and is at risk for the cost of all services. The demonstration will be independently evaluated through a separate contract.

Status: Enrollment began in September 1987 and now stands at 150. The State and Mt. Sinai have submitted utilization and cost reports indicating that the alternative health plan is financially viable. The State began a phase-down 3 months before the demonstration's scheduled termination date. The plan will continue under the regular Medicaid program; however, the benefit package offered by Mt. Sinai will not include home and community-based services.

Evaluation of the Florida Alternative Health Plan Project

Project No.: 500-87-0028
Period: September 1988-May 1990
Funding: $ 122,262
Award: Technical Support: Evaluation of Demonstrations
(See page 80)
Contractor: Mathematica Policy Research, Inc.
P.O. Box 2393
Princeton, N.J. 08543-2393
Task Leader: Ruth B. Pickard
Division of Health Systems and Special Studies

Description: This project is evaluating the demonstration of a capitated model for the delivery of health care and social support services to those frail elderly among the Medicaid population who would otherwise be at risk of premature institutionalization. The study will assess the feasibility of using case management techniques to coordinate a variety of services under a single provider that would also assume full financial risk for the cost of such care. In particular, the evaluation will seek to determine the adequacy of the ratesetting methodology, the cost effectiveness of the case management program, and the degree of satisfaction with these arrangements among the providers, as well as among both the frail elderly clients and their informal-caregiver agents.

Status: Primary data collection from the case study of the site is complete. Client responses to short surveys conducted by the plan's case managers have been received and are currently being analyzed. Arrangements for securing the necessary data to assess the ratesetting methodology are under way. A final report is expected in Spring 1990.

Evaluation of the Medicare Competition Demonstrations

Project No.: 500-83-0047
Period: October 1983-January 1989
Funding: $ 3,797,219
Award: Contract

Contractor: Mathematica Policy Research, Inc.
Suite 550
600 Maryland Avenue, SW.
Washington, D.C. 20024
Project Officer: James P. Hadley
Division of Health Systems and Special Studies

Description: The Health Care Financing Administration sponsored an evaluation of a major series of demonstrations, designed to introduce significant competition into the market for providing health services to Medicare beneficiaries. The evaluation focused on 20 health maintenance organizations (HMOs) and other competitive medical plans (CMPs) throughout the United States that provide health services to Medicare beneficiaries for a prospectively determined payment. These sites originally started as demonstrations, but they continued to serve Medicare beneficiaries under the Tax Equity and Fiscal Responsibility Act of 1982. This evaluation focused on the following major policy issues:

- The impacts of enrollment of Medicare beneficiaries by HMOs and CMPs under risk-based capitation on the use, quality, and cost of care.
- The determinants of consumer choice of HMOs and CMPs and the marketing strategies pursued by HMOs and CMPs.
- The nature and extent of biased selection.

Status: The evaluation began in October 1983 and was completed January 1, 1989. The following reports are available from the National Technical Information Service (NTIS):

- "The Implementation of the Medicare Competition Demonstration: A Report from the National Evaluation of the Medicare Competition Demonstrations," accession number PB86-180015.
- "Evaluation of the Medicare Competition Demonstrations: A Preliminary Analysis of the Use and Cost of Services—Aggregate Health Maintenance Organization Data," accession number PB86-245388.
- "The Structure of Quality Assurance Programs in Health Maintenance Organizations and Competitive Medical Plans Enrolling Medicare Beneficiaries," accession number PB87-207163.
- "Enrollment and Disenrollment in Medicare Competition Demonstration Plans: A Descriptive Analysis," accession number PB87-207189.
- "Second Annual Report, National Medicare Competition Evaluation," accession number PB87-206561.
- "Biased Selection in the Medicare Competition Demonstrations," accession number PB89-113898.
- "An Analysis of Patient Satisfaction for Enrollees and Disenrollees in Medicare Risk Plans," accession number PB89-190987.
- "An Evaluation of the Quality of the Process of Care," accession number PB90-130196.

In addition to these reports, a final summary and a final use and cost analysis using individual-level beneficiary data have been completed and will be available through NTIS in early 1990.

Evaluation of Medicare Health Maintenance Organization Demonstration Projects

Funding: Intramural
Project Officer: Gerald F. Riley
Division of Beneficiary Studies

Description: This study evaluates demonstration projects undertaken to encourage health maintenance organizations (HMOs) to participate in the Medicare program under a risk mechanism. Three demonstration HMOs are included in the study: Fallon Community Health Plan, Greater Marshfield Community Health Plan, and Kaiser-Permanente of Portland, Oregon. The study includes 18,085 aged Medicare beneficiaries who had enrolled in the plans as of April 1981. Also included are comparison groups from a random sample of aged Medicare beneficiaries living in the same geographic areas as the enrollees. The evaluation examines issues such as biased selection, patterns of prior and post-enrollment use by HMO enrollees, and comparisons of use and expenditure patterns by HMO and non-HMO beneficiaries.

Status: The following published works include findings from this study:

- Kasper, J.D., Riley, G.F., McCombs, J.S., and Stevenson, M.A.: Beneficiary selection, use, and charges in two Medicare capitation demonstrations. *Health Care Financing Review*, Vol. 10, No.1. HCFA Pub. No. 03274. Office of Research and Demonstrations, Health Care Financing Administration. Washington. U.S. Government Printing Office, Fall 1988.
- Kasper, J.D., Riley, G.F., and McCombs, J.S.: Capitation and Medicare: Past, present and future. In Pauly, M.V., and Kissick, W.L., eds. *Lessons from the First 20 Years of Medicare*. Pennsylvania. University of Pennsylvania Press, 1988.
- Riley, G., Rabey, E., and Kasper, J.: Biased selection and regression toward the mean in three Medicare HMO demonstrations: A survival analysis of enrollees and disenrollees. *Medical Care* 27(4):337-347, April 1989.

Evaluation of the Medicaid Competition Demonstrations

Project No.: 500-83-0050
Period: September 1983-June 1989
Funding: $ 4,215,473
Award: Contract
Contractor: Research Triangle Institute
P.O. Box 12194
Research Triangle Park, N.C. 27709
Project Officer: Ronald W. Deacon
Division of Health Systems and Special Studies

Description: Medicaid demonstrations were implemented in six States (California, Florida, Minnesota, Missouri, New Jersey, and New York) to test alternative strategies

for the delivery and financing of health care to Medicaid beneficiaries. A common feature in these projects was that States tested prospective/capitated payments and case management to promote a more efficient Medicaid program. In 1983, the Office of Research and Demonstrations initiated a comprehensive evaluation of these Medicaid capitation demonstrations. An evaluation contract was awarded to Research Triangle Institute (RTI) to assess cost, utilization, access, satisfaction, and quality-of-care issues under the demonstrations.

Status: A complete set of the final reports, "Nationwide Evaluation of Medicaid Competition Demonstrations," is available from the National Technical Information Service, accession number PB89-209688. The findings are generally supportive of Medicaid capitated health care alternatives. These demonstrations had a positive impact on controlling Medicaid patients' emergency room and inpatient utilization, increasing access, and promoting higher levels of patient satisfaction and overall quality of care. This study, however, was only able to obtain first-year demonstration cost data, which included some level of startup costs. The overall cost-effectiveness findings were inconclusive. Most of the demonstrations spent more money for health care under a capitated health care arrangement than RTI estimated would have been spent in the regular fee-for-service Medicaid program. However, the evaluator indicated that after several years of ratesetting experience, States could ultimately design cost-effective capitated health care alternatives.

Beneficiary Incentives to Choose Alternative Health Plans

Project No.: 99-C-98489/9-06
Period: May 1986-July 1990
Funding: $ 422,309
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center
(See page 77)
Task Leader: Armen H. Thoumaian
Division of Hospital Experimentation

Description: The objective of this project is to estimate how various design features of alternative payment systems for Medicare affect beneficiaries' decisions to remain in the traditional program or to join an alternative health system. Using a mail survey, RAND is studying the preferences of beneficiaries for various hypothetical health plans to create an economic model of beneficiary choice.

Status: The study's design, "Beneficiary Incentives to Participate in Alternative Health Plans: A Research Design," was completed in March 1988 and is available from RAND (N-2733-HCFA). Field work on the survey, which began in June 1988, was completed in December 1988. A total of 1,047 interviews were completed, representing 43 percent of the eligible sample. Data from the survey were linked with Medicare files to create the analytic data file necessary for the creation of an economic model of beneficiary preference. RAND expects to complete the generation of a general economic model by February 1990. The final report is expected by April 1990.

Information for Prudent Insurance Choices

Project No.: 18-C-98686/9-03
Period: November 1984-March 1988
Funding: $ 300,000
Award: Cooperative Agreement
Awardee: Western Consortium for the Health Professions, Inc.
703 Market Street, Suite 535
San Francisco, Calif. 94103
Project Officer: Herbert A. Silverman
Division of Program Studies

Description: This project developed a methodology for organizing and presenting data on illness costs and insurance benefits that are intended to increase the capacity of aged Medicare beneficiaries to make prudent choices in selecting supplemental health insurance coverage. The informational documents generated by this methodology permit comparisons of out-of-pocket costs and benefits of alternative plans. The comparisons are based on scenarios involving episodes of illness common to the aged. Workshops were presented to Medicare beneficiaries in the Los Angeles area that described charges associated with selected illness episodes for various health insurance options available in the study area. Two groups were given pre- and post-test measurements of their choices regarding health insurance options. In the workshops for the test group, information on out-of-pocket expenses associated with each illness episode was presented for each of the options available to them. In the workshops for the comparison groups, only general information on the insurance options was presented. The options presented included: medigap plans with a range of benefits, including skilled nursing facility care; closed and open panel health maintenance organizations (HMOs); an exclusive provider organization option providing benefits beyond those generally offered by health insurance plans (e.g., glasses, prescription drugs); and a disease-specific plan.

Status: A final report was received in September 1989. The project findings indicate that aged Medicare beneficiaries have a poor understanding of their coverages under Medicare and supplementary insurance policies and often pay for duplicative coverages. The presentations to the test and comparison groups moderately improved understanding of their insurance coverages. Followup mail surveys 3 and 9 months following the presentations showed that about 60 percent of the members in both groups made no change in their insurance coverages. There was some indication, though not statistically significant at the 95-percent confidence level, that the test group had a larger increase in HMO membership. Overall, it was found that the test group showed a greater decrease in premium payments and duplicative coverages.

Evaluation of the Office of Public Affairs Marketing Campaign

Project No.: 500-87-0028
Period: September 1987-March 1989
Funding: $ 172,651
Award: Technical Support: Evaluation of Demonstrations
(See page 80)
Contractor: Mathematica Policy Research, Inc.
P.O. Box 2393
Princeton, N.J. 08543-2393
Task Leader: Robin J. Brocato
Division of Health Systems and Special Studies

Description: The Health Care Financing Administration's Office of Public Affairs (OPA) conducted a 6-month information campaign in Albuquerque, New Mexico; Cleveland, Ohio; and Houston, Texas. The purpose of the campaign was to enhance awareness of and expand information on using health maintenance organizations (HMOs) as an alternative to traditional Medicare benefits. Efforts were focused on Medicare beneficiaries and relatives and friends who advise them; health care providers; and business, labor, and financial institutions. The evaluation assessed the impact of the campaign on Medicare beneficiaries in terms of:

- Their awareness and knowledge of HMOs, both generally and specifically, as they are available to Medicare beneficiaries.
- Their sources of information about HMOs.
- Their interest in learning more about HMOs and in enrolling as members.

The evaluation included a case study documenting the OPA marketing campaign and a pre- and post-campaign survey of Medicare beneficiaries.

Status: The final evaluation report, "The Options Campaign in Albuquerque, Houston, and Cleveland: A Case Study of the Campaign and an Evaluation of its Impact on Awareness, Source of Information, and Interest in Medicare Health Maintenance Organizations," has been completed. In general, based on the case study and survey findings, the campaign generated too little publicity, and reached too few beneficiaries directly, to have enhanced the awareness and interest of nonenrollees. The report is available from the National Technical Information Service, accession number PB89-182976.

Hospital Payment

Prospective Payment System Refinements

A Diagnosis-Related-Group-Based Case-Mix Analysis of Oncology Care in Comprehensive Cancer Centers

Project No.: 15-C-98922/1-01
Period: August 1986-April 1989
Funding: $ 461,000
Award: Cooperative Agreement
Awardee: Brandeis University
415 South Street
Waltham, Mass. 02254
Project Officer: John T. Petrie
Division of Reimbursement and Economic Studies

Description: The short-term goal of this project is to improve the capacity of the current diagnosis-related group (DRG) system to account for variability within DRGs that contain cancer diagnoses. The long-term goal is to develop a classification methodology that can discriminate among admissions with different resource requirements for three types of cancer: colon, breast, and lung. There are two components to this project:

- A secondary data analysis of the Medicare provider analysis and review (MEDPAR) files from 1984, 1985, and 1986 for three types of cancer. The purpose of this exercise is to suggest a typology for Medicare cancer discharges.
- A retrospective record review in five Boston area hospitals (two major teaching hospitals, one nonteaching hospital, and two community hospitals).

All analyses are focused on the Medicare population and include data on several years of utilization and resource use experience in comparing patient characteristics with treatment settings. The data and analysis will help us learn more about how to design a refined case-mix classification system that incorporates substitutions and efficiencies affected by the shift to outpatient settings.

Status: The researchers constructed a linked 1984, 1985, and 1986 MEDPAR data file for beneficiaries who had an inpatient discharge with a principal diagnosis of cancer. The analysis focused on determining the volume and costs associated with cancer-related discharges. Researchers studied the utility of grouping discharges by primary anatomical site of cancer and the usefulness of modifying the leading cancer DRGs using primary site and other variables. They also examined the case mix and the charges for chemotherapy treatment for inpatient discharges for DRG number 410 (admission for chemotherapy) from eight teaching hospitals and those charges for outpatient visits from two teaching hospitals. Findings were published in an article by Lion et al. entitled, "Case mix and charges for inpatient and outpatient chemotherapy," in the *Health Care Financing Review*, Vol. 8, No. 4, Summer 1987. The researchers also developed and tested a survey instrument to undertake retrospective medical record review in five Boston-area hospitals. Current work involves abstracting information for about 800 records at these hospitals to gather data on inpatient stays, followup admissions, and related outpatient care. A final report is expected in mid-1990. Some preliminary findings are:

- Virtually no difference existed in the amount of variation in total charges explained by six admission purpose groups versus the cancer diagnosis-related groups.

- Advances in technology, such as new infusion techniques that are slower in nature, may require longer lengths of stay.
- Small rural hospitals and public hospitals appear to show a high level of palliative-type regimens in treating cancer patients. This indicates that in these hospitals palliative care may be substituting for skilled nursing facility care, home health care, or hospice care.
- The medical record review portion of the study yielded data on about 800 cases. Cell sizes for the three cancers and the six admission purpose groups were small. This medical record review served to confirm the notion that certain hospitals specialize in treating certain types of cancer patients.

Diagnosis-Related Group Refinement and Diagnostic-Specific Comorbidities and Complications: A Synthesis of Current Approaches to Patient Classification

Project No.: 17-C-98930/1-02
Period: August 1986-December 1988
Funding: $ 576,267
Award: Cooperative Agreement
Awardee: Yale University
School of Organization and Management
P.O. Box 1A
New Haven, Conn. 06520
Project Officer: Harry L. Savitt
Division of Beneficiary Studies

Description: This project proposes to examine the effect of patient comorbidities and complications on hospital resource use. It will investigate whether the relationship between selected diagnoses and hospital utilization depends on the presence of other diagnoses. It also seeks to make recommendations to modify the current diagnosis-related groups (DRGs) using diagnostic-specific comorbidities and complications to define the more complex types of patients with high levels of utilization.

Status: This project has been completed. During the project, eight technical advisory committee meetings were held. Data were obtained from six sources: Medicare provider analysis and review file, Hospital Discharge Survey, Maryland, California, New Jersey, and Stanford University. A hierarchy and clinical evaluation of secondary diagnoses were developed. Disease staging and other patient classification schemes were reviewed and evaluated. Operating room and nonoperating room procedures were reviewed. Forward selection process models were developed, refined, and simplified. Analysis of adjacent DRGs was performed. The project staff reviewed results and made recommendations regarding the incorporation of specific comorbidities and complications into DRG definitions. Comparisons of the modified DRGs were made with the current version and will be based on selected criteria for developing and evaluating patient-classification schemes or measures of case mix that have been discussed in the literature. A final report was received in February 1989.

Yale concluded that the refined DRGs represent a substantial improvement over the current version. Other findings from the study are:

- The refinements are an extension of an already well-established base of research on case-mix systems.
- The clinical coherence of this scheme has been considerably enhanced by identifying patients with very serious conditions in the class structure.
- The predictive performance of the DRGs has improved under the refinement model.
- Implementation would not necessitate a radical departure from the current structure of the DRGs, and the system requires only information that commonly appears on the hospital discharge abstract.
- The model can easily accommodate future refinements at all levels of the classification scheme.

Disease-Specific Severity Adjustments to Diagnosis-Related Groups

Project No.: 15-C-98833/6-02
Period: January 1986-February 1988
Funding: $ 280,129
Award: Cooperative Agreement
Awardee: Tulane School of Public Health and Tropical Medicine
1430 Tulane Avenue
New Orleans, La. 70112
Project Officer: Harry L. Savitt
Division of Beneficiary Studies

Description: This study is an empirical investigation of the efficacy of seven different methods of adjusting for severity of illness in diagnosis-related groups (DRGs) related to acute myocardial infarction. The purpose of this study is to determine the equity of the current DRG payments for patients suspected of having heart attacks. This is one of several studies designed to analyze the degree to which DRGs properly account for severity.

Status: The project has ended. The following tasks have been completed:

- The full research team has been assembled.
- Data collection forms have been designed.
- Medical records personnel have been trained.
- Data collection has begun.
- Data entry, editing, and analysis have been completed.
- The final report has been received and is being reviewed.

Findings included in the final report are:

- There was no difference in the severity of illness of patients going to tertiary as opposed to referring hospitals in DRGs 121, 122, and 123 that were treated by both types of hospitals.
- There was difference in within-DRG in-hospital mortality rates between patients admitted to tertiary versus referring hospitals.
- Further improvements should be made in severity of illness measures before they are used in comparative evaluation of hospital quality of care.

Methods to Improve Case-Mix and Severity of Illness Classification for Use in the Medicare Prospective Payment System

Project No.: 17-C-98840/1-03
Period: September 1985-December 1989
Funding: $ 1,400,564
Award: Cooperative Agreement
Awardee: The Health Data Institute
Seven Wells Avenue
Newton, Mass. 02159
Project Officer: Timothy F. Greene
Division of Reimbursement and Economic Studies

Description: This study, which contributes to the Health Care Financing Administration's (HCFA's) congressionally mandated research on diagnosis-related-groups (DRG) refinement under Public Law 98-21, is intended to support investigation of alternative HCFA policies, assess multivariate severity models, and examine use of additional clinical and service items as severity adjusters. Project researchers have developed data bases of Colorado Medicare Part A and Part B data. They have identified clinical indicators of resource use and have collected data from medical records in Boston-area hospitals. They have also used national data, collected principally by the Office of Inspector General, Department of Health and Human Services, to validate the results obtained from analyses of the Boston data. Researchers are also conducting analyses of the reliability of medical record review and analyses of cost and clinical data developed in HCFA's mortality predictors project.

Status: The study has concentrated its efforts on evaluating the potential use of clinical data in medical records to explain resource use within and across DRGs. Specifically, measures based on clinical data explain from 15 to 63 percent of variation in resource use within any given condition (a group of DRGs) and from 15 to 53 percent of variation across multiple conditions in models using Boston-area data. When applied to national data, these measures explain up to 25 percent of variation across DRGs. In general, models using extreme values of variables measured during a hospital stay explain more variation in resource use than models that use values at admission. The study shows that use of extreme rather than admission values in a payment system has the potential of allocating more resources to patients receiving ineffective care. Furthermore, most of the models developed include from three to five clinical variables, although variables with the strongest explanatory power differed across conditions. Work on the project has provided technical support for the intramural mortality predictors project. Models were developed by the Office of Research and Demonstrations to predict the probability of death of Medicare acute care hospital patients with stroke, pneumonia, myocardial infarction, and congestive heart failure. The resulting models were incorporated in microcomputer software prepared by the grantee. The "Medicare Mortality Predictor System" software can be obtained from the National Technical Information Service, accession number PB88-240171.

Administratively Necessary Days

Project No.: 99-C-98489/9-05
Period: May 1987-July 1988
Funding: $ 19,973
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center
(See page 77)
Task Leader: Paul A. Gurny
Division of Hospital Experimentation

Description: Under this project, RAND used an existing data base to provide information to the Health Care Financing Administration (HCFA) in support of a report on administratively necessary days. An administratively necessary day is a day of subacute care provided by a hospital when no skilled nursing bed is available. This project is providing information on the following topics:

- Which diagnosis-related groups are associated with the use of skilled nursing facility (SNF) care after discharge from acute care hospitals.
- Whether patients who use SNF care have significantly different hospital lengths of stay than patients who do not use SNF care.
- The extent to which health care market characteristics explain the wide variation among States in the use of SNF services by Medicare beneficiaries.

Status: Findings on the first two topics were presented to HCFA in March 1988. Data on the last topic have been gathered and analyzed. A draft report setting forth the findings was delivered in early 1989. The final report has been received and will be available by Spring 1990.

Project No.: 99-C-98526/1-06
Period: May 1987-December 1988
Funding: $ 700,854
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: Paul A. Gurny
Division of Hospital Experimentation

Description: This study involved an analysis of issues related to whether Medicare should make explicit payment to hospitals for administratively necessary days (ANDs). The study provided a number of policy options as well as information that was incorporated in a Report to Congress on the AND issue. This study was mandated by Section 9305(e) of the Omnibus Budget Reconciliation Act of 1986.

Status: The study was completed in December 1988. A final report, "Should Medicare Compensate Hospitals for Administratively Necessary Days?" is expected to be available from the National Technical Information Service by early 1990. The Report to Congress has been drafted.

Indirect Medical Education Under the Prospective Payment System

Project No.: 99-C-98489/9-05
Period: May 1987-July 1989
Funding: $ 42,072
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center
(See page 77)
Task Leader: Philip G. Cotterill
Division of Reimbursement and Economic Studies

Description: This project involved studying whether the amount of indirect medical education payments made under the prospective payment system to teaching hospitals exceeds the true costs of indirect medical education. Using 1984 data, RAND researchers investigated various econometric aspects of the indirect medical education formula.

Status: The final working draft for this project, "Estimating the Indirect Costs of Teaching: Econometric Issues and Alternatives" (WD-4150-HCFA), is available from RAND. The main conclusion was that the most important source of misspecification in estimating indirect teaching costs stems from measuring teaching intensity as the logarithm of 1 plus the intern-to-bed ratio.

Alternative Recalibration Methods Under the Prospective Payment System

Project No.: 99-C-98489/9-05
Period: May 1987-July 1989
Funding: $ 95,280
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center
(See page 77)
Task Leader: Philip G. Cotterill
Division of Reimbursement and Economic Studies

Description: The main purpose of this project was to evaluate three methods of calculating diagnosis-related group (DRG) relative weights. One method is based on costs, one on charges, and one on an alternative method for standardizing weights. The Health Care Financing Administration is legislatively mandated to recalibrate the DRG weights each year.

Status: The final working draft, "Comparison and Evaluation of Alternative DRG Weight Recalibration Methods" (WD-3888-1-HCFA), is available from RAND. Findings show that based on 1984 data, charge weights result in higher payments to surgical DRGs and lower payments to medical DRGs relative to cost weights. However, on theoretical grounds, there is no reason to favor one set of weights over another.

Simulations of Alternative Prospective Payment System Outlier Payment Options

Project No.: 99-C-98489/9-06
Period: August 1988-July 1990
Funding: $ 55,310
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center
(See page 77)
Task Leader: Philip G. Cotterill
Division of Reimbursement and Economic Studies

Description: This study is a continuation of a previous project, Development of Alternative Prospective Payment System Outlier Payment Options. RAND is analyzing the effect of simulating outlier payments using unaudited recent cost reports versus audited cost reports for earlier years. RAND will also evaluate the measure used in earlier work to assess the financial risk to groups of hospitals and the financial risk that patient groups pose to hospitals. RAND will also update the data base used in the previous outlier project.

Status: A report on these activities is expected by July 1990.

Uncompensated Care Tables: 1984 American Hospital Association and Urban Institute Survey

Project No.: 99-C-98526/1-05
Period: August 1988-July 1990
Funding: $ 32,126
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: John T. Petrie
Division of Reimbursement and Economic Studies

Description: This project involves analyses of data on the distribution of the uncompensated care burden. The analyses will also include data obtained from a special 1984 American Hospital Association (AHA) and Urban Institute Survey on health care for the poor and underinsured, as well as data from the Current Population Survey and other data sources. Information gathered from these analyses will be used to produce data tables.

Status: The data tables were delivered in November 1988. Using 1987 financial data from AHA, the Urban Institute is preparing a descriptive paper on uncompensated care costs for 1987. This paper is expected by May 1990.

Hospital Transfer and Referral Patterns

Project No.: 99-C-99168/3-02
Period: May 1988-February 1990

Funding: $ 113,386
Award: Cooperative Agreement
Awardee: Project Hope Research Center
(See page 79)
Task Leader: William Buczko
Division of Reimbursement and Economic Studies

Description: The objective of this task is to design and develop a longitudinal data base containing information on transfer and referral activities in Medicare hospitals. The data base will include data for a 5-year period and will be created from the Health Care Financing Administration's (HCFA) master provider of services file and the HCFA Medicare provider analysis and review (MEDPAR) file. Data on hospital transfer and referral activities will be used to develop hospital market share measures to assess the impact of the prospective payment system (PPS), explore reasons for variations in hospital costs, and evaluate the appropriateness of transfer and referral measures as refinements or replacements for current PPS rate adjustments.

Status: Final specifications have been developed for the transfer and referral files. Construction of the data bases for fiscal years 1984-87 is in progress. Data base construction for fiscal year 1988 will begin when a complete MEDPAR file for that year becomes available. The fiscal year 1987 transfer and referral and patient origin files were completed in 1989.

Interactions Between Outlier Payment Policy and Methods of Diagnosis-Related Groups Recalibration and Classification

Project No.: 99-C-98489/9-06
Period: August 1989-July 1990
Funding: $ 95,556
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center
(See page 77)
Task Leader: Philip G. Cotterill
Division of Reimbursement and Economic Studies

Description: The project is comprised of three tasks. The first task will be an assessment of the extent to which charge-based and cost-based diagnosis-related groups' (DRGs) relative weights have diverged between 1984 and 1987. The second task will be a comparison of payments to, and risk faced by, groups of hospitals under several budget-neutral methods of financing outlier payments. The third task will be an investigation of how the revised Yale DRGs would affect the need for outlier payments and appropriate parameters for outlier policy.

Status: This project is in the early developmental stage.

Prospective Payment System Impact

Selected Analyses of the Prospective Payment System's Impact on Hospitals' Behavior

Project No.: 18-C-98606/3-03
Period: July 1984-July 1989
Funding: $ 549,657
Award: Cooperative Agreement
Awardee: The Urban Institute
Health Policy Center
2100 M Street, NW.
Washington, D.C. 20037
Project Officer: Philip G. Cotterill
Division of Reimbursement and Economic Studies

Description: This project supported the prospective payment system (PPS) evaluation that is congressionally mandated under the Social Security Amendments of 1983 (Public Law 98-21). It was intended to include an analysis of the impact of the Medicare hospital prospective payment system (PPS) on three types of hospital behavior: the provision of services to Medicare beneficiaries by hospital outpatient departments; the discharge of Medicare beneficiaries to and provision of long-term care and home health services; and changes in hospitals' corporate structure and internal organization. Other aspects of hospital behavior, including measures of utilization and costs, were also examined. The analysis was based primarily on data from a series of hospital surveys conducted by the Urban Institute and the American Hospital Association (AHA). Data on hospital revenue and expenses in 1980 and 1982 were used to project expected hospital performance in a pre-PPS environment and compared with data on actual hospital performance in 1984 and 1985.

Status: The project was near completion as of September 1989. The study produced evidence that PPS did have an effect on the rate of change of hospital cost per case and length of stay. An analysis of AHA data on hospital performance during 1985 indicated further that the fiscal pressure felt by hospitals during the first year of PPS had a significant effect on their second-year behavior. Detailed findings are reported in the following articles:

- How did Medicare's prospective payment system affect hospitals? *New England Journal of Medicine*. Vol. 317, No. 14, October 1, 1987.
- Profits and fiscal pressure in the prospective payment system: Their impacts on hospitals. *Inquiry*. Vol. 26, No. 3, Fall 1989.
- A Simultaneous Equations Model of the Impact of PPS on Hospitals. Working Paper 797-06. Center for Health Policy Studies, October 1989.

Impact of Medicare's Prospective Payment System and Private Sector Initiatives: The Blue Cross and Blue Shield Organization's Experiences

Project No.: 17-C-98757/5-02
Period: September 1985-February 1989
Funding: $ 319,335
Award: Cooperative Agreement
Awardee: Blue Cross and Blue Shield Association
676 North St. Clair
Chicago, Ill. 60611
Project Officer: Timothy F. Greene
Division of Reimbursement and Economic Studies

Description: This study, which contributed to the Health Care Financing Administration's congressionally mandated evaluation of the prospective payment system (PPS) under Public Law 98-21, evaluated the impact of PPS and Blue Cross/Blue Shield cost-containment strategies on the payment and utilization experience of the Nation's Blue Cross/Blue Shield plans. Researchers analyzed the interaction between PPS and Blue Cross/Blue Shield cost-containment strategies. They studied the impact of health maintenance organizations (HMOs) and preferred provider organizations (PPOs) on Blue Cross utilization and payments. They also examined the determinants of the formation of alternative delivery systems (HMOs and PPOs) by Blue Cross plans. Data from individual Blue Cross/Blue Shield plans, supplemented by secondary data from other sources, were used.

Status: Analyses of trends in payments and utilization rates for Blue Cross/Blue Shield plans were used in the preparation of the 1985 and 1986 Annual Reports to Congress on the *Impact of the Medicare Hospital Prospective Payment System*. Reports on the impact of PPS and cost-containment initiatives and the development of alternative delivery systems on Blue Cross utilization and payments for the period 1980-86 and 1980-87 were submitted. The research findings showed that PPS had a significant indirect effect on Blue Cross hospital utilization and payments for the 1980-87 period, with significant negative impacts on admissions per member and total hospital payments per member and mixed effects on other payment measures. The analysis of alternative delivery systems indicates that the share of Blue Cross and Blue Shield plan membership in HMOs increases and the share in PPOs decreases a year after changes in hospital payment and utilization. Increased HMO enrollment is associated with increased inpatient payments and lower outpatient payment per member. The net result is no effect on total hospital payment per member for the entire plan. In contrast, PPOs increase outpatient payment per member and reduce inpatient payments, with a net effect of a significant reduction in total hospital payment per member for the entire plan. The findings on the 1980-86 experience are shown in the report entitled "The Impact of Medicare's Prospective Payment System and Private Sector Initiatives: Blue Cross Experience, 1980-1986."

This report can be obtained from the National Technical Information Service, accession number PB88-248604. A second report that contains the analysis of 1987 data and findings from the study of alternative delivery systems has been received.

Prospective Payment and Analytical Support Studies

Project No.: 500-85-0015
Period: September 1985-December 1988
Funding: $ 5,448,000
Award: Contract
Contractor: Abt Associates, Inc.
55 Wheeler Street
Cambridge, Mass. 02138
Project Officer: Sydney P. Galloway
Office of Operations Support

Description: This project provided data collection and statistical analysis in support of the congressionally mandated (Public Law 98-21) Annual Report on the *Impact of the Medicare Hospital Prospective Payment System* (PPS), other congressionally mandated reports, and other PPS-related studies. Individual work assignments were made throughout the project focusing on specific aspects of these studies and reports. The work assignments fell under six general headings:

- Impact on hospitals.
- Impact on Medicare beneficiaries.
- Impact on other payers for inpatient hospital services.
- Impact on other providers of health care.
- Impact on Medicare program operations and expenditures.
- Data collection and manipulation, and project management and coordination.

Status: As of the end of this contract on December 30, 1988, 25 work assignments had been completed. A replacement contract was awarded in June 1988 to Abt Associates, 500-88-0035. This contract and its replacement were allowed to continue concurrently until December 1988.

Project No.: 500-86-0017
Period: April 1986-March 1989
Funding: $ 1,445,000
Award: Contract
Contractor: System Sciences, Inc.
4330 East-West Highway
Bethesda, Md. 20814
Project Officer: Sydney P. Galloway
Office of Operations Support

Description: This was a companion to contract 500-85-0015 with Abt Associates, Inc., and it deals with the prospective payment system (PPS)-related areas not covered by other cooperative agreements or contracts. The assignments involved the impact of PPS on the provision of physician services and an examination of post-hospital subacute care (aftercare) services.

Status: The project has been completed. Five work assignments were completed under this contract.

Prospective Payment System Studies

Project No.: 500-88-0035
Period: June 1988-December 1990
Funding: $ 1,836,392
Award: Contract
Contractor: Abt Associates, Inc.
55 Wheeler Street
Cambridge, Mass. 02138
Project Officer: Philip G. Cotterill
Division of Reimbursement and Economic Studies

Description: This project continues the support for the prospective payment system (PPS) studies provided under the previous contract 500-85-0015 with Abt Associates, Inc., on the impact of the Medicare hospital PPS, other congressionally mandated reports, and other PPS-related studies.

Status: As of September 30, 1989, 14 work assignments had been made under this contract. Three of these assignments have been completed, and work continues on the others. Working papers on "Medicare Use in Rural Areas," October 1989, "Medicare Episodes Involving Hospitalization and Death," September 1989, and "East-West Differences in Episodic Practice Patterns," July 1989, are available from Abt Associates.

Natural History of Post-Acute Care for Medicare Patients

Project No.: 17-C-98891/5-01
Period: December 1986-September 1990
Funding: $ 3,373,670
Award: Cooperative Agreement
Awardee: University of Minnesota
School of Public Health
Post-Acute Care Project
714 Washington Avenue, SE., Suite 203
Minneapolis, Minn. 55414
Project Officer: Marni J. Hall
Division of Long-Term Care Experimentation

Description: This is a study of the course and outcomes of post-acute care. It has two major components: analysis of Medicare data to assess differences in patterns of care across the country and to determine the extent of substitution where various forms of post-acute care services are more or less available, and detailed examination of clinical cases from the most common diagnostic-related groupings receiving post-acute care in a few selected locations. Measures of the complexity of the clinical cases will be developed using a modification of the medical illness severity grouping system. This project is jointly funded with the Office of the Assistant Secretary for Planning and Evaluation.

Status: Data collection is continuing. This project is analyzing preliminary data gathered from Medicare beneficiaries to address questions raised about the need for and the consequences of providing long-term care as set forth in the Medicare Catastrophic Coverage Act of 1988.

Prospective Payment System and Post-Hospital Care: Use, Cost, and Market Changes

Project No.: 18-C-98852/3-02
Period: September 1985-January 1990
Funding: $ 706,118
Award: Cooperative Agreement
Awardee: Georgetown University
Center for Health Policy Studies
2233 Wisconsin Avenue, NW.
Washington, D.C. 20007
Project Officer: Judith A. Sangl
Division of Long-Term Care Experimentation

Description: The purpose of the project is to determine how much the hospital prospective payment system (PPS) shifts care from the hospital to skilled nursing facilities (SNFs) and home health providers and to analyze the impact of this shift on total costs to Medicare and on changes in SNF characteristics that are likely to cause an increase in use by Medicare beneficiaries in the future. Medicare claims will be analyzed to determine how PPS has affected total service use (hospital, SNF, and home health) and costs for hospital patients. In addition, SNFs will be surveyed to identify changes in nursing home patients, services, and market structure likely to affect Medicare use. The survey will be supplemented with data from the Medicare/Medicaid Automated Certification System (MMACS), SNF cost reports, and other sources.

Status: Major project activities include:

- Completion of nursing home survey.
- Analysis of survey and MMACS data.
- Initiation of claims analysis.
- Completion of 1982 and 1985 Medicare claims processing for pre- and post-PPS analysis.
- Completion of a three-stage sampling process of study hospitals.

The final report is expected early in 1990.

Diagnosis-Related Group Outlier Payment Effect on Quality of Care

Project No.: 99-C-98489/9-05
Period: August 1989-July 1990
Funding: $ 90,125
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center
(See page 77)
Task Leader: Harry L. Savitt
Division of Beneficiary Studies

Description: There are concerns that Medicare reimbursement under the diagnosis-related group (DRG) system may induce inappropriate levels of care by paying too much for the outlying patient, and too little for the expensive patient that is not an outlier. This research is designed to use the clinical data of 15,000

patients gathered for the DRG/quality of care study being performed by RAND to examine two specific questions:

- Do outlier payments have any effect on levels and quality of care?
- What factors are responsible for extremely expensive or long hospital stays?

Status: Analytic files have been developed and an analysis is ongoing. A working draft is expected in Spring 1990.

Review of New Jersey's Prospective Payment System

Project No.: 99-C-98489/9-05
Period: May 1986-July 1988
Funding: $ 207,532
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center
(See page 77)
Task Leader: Cynthia K. Mason
Division of Hospital Experimentation

Description: This project was designed to analyze the prospective payment system for New Jersey. New Jersey has the oldest diagnosis-related group-based prospective payment program in the country and, like the Medicare system, New Jersey's system is based on paying hospitals a lump-sum payment for each admitted patient.

Status: This project has been completed. The final report, "Hospital Costs and Patient Access Under the New Jersey Diagnostic-Related Group-Based All-Payor Hospital Ratesetting System" (R-3601-HCFA), is available from the RAND Policy Research Center.

Interaction Between Medicare Payments and Nursing Shortages

Project No.: 99-C-99168/3-01
Period: March 1988-February 1989
Funding: $ 62,170
Award: Cooperative Agreement
Awardee: Project Hope Research Center
(See page 79)
Task Leader: Timothy F. Greene
Division of Reimbursement and Economic Studies

Description: The purpose of this project was to examine the interaction taking place between the Medicare prospective payment system (PPS) and the nursing shortage reported by hospitals in many areas of the country. Issues to be addressed included the nature and existence of a nursing shortage, possible causes for this shortage, the impact of this shortage on quality of and access to care for Medicare beneficiaries, and the contributions of PPS relative to other influences.

Status: The study involved an analysis of changes in registered nurse utilization in short-term general hospitals and the relationship of utilization to PPS implementation and impact, labor market conditions, hospital characteristics, and market area characteristics. The research was limited to 897 hospitals in 22 standard metropolitan statistical areas (SMSAs) for which nurse wage data were available. The study concluded that implementation of PPS and increases in case-mix complexity contributed to, but did not fully explain, increases in demand for nurses by hospitals from 1981 to 1985. The final report, "An Examination of the Relationship Between Medicare Prospective Payment and the Nursing Shortage," is expected to be available from the National Technical Information Service by early 1990.

Medicare Hospital Payment Policies: Impact on the Nursing Shortage

Project No.: 99-C-99169/5-02
Period: August 1989-July 1990
Funding: $ 99,226
Award: Cooperative Agreement
Awardee: University of Minnesota Research Center
(See page 79)
Task Leader: Timothy F. Greene
Division of Reimbursement and Economic Studies

Description: Reports of high and increasing vacancy rates for nurses in the Nation's hospitals since 1984 have raised concern over a nursing shortage. Since this has occurred shortly after implementation of the Medicare prospective payment system, questions have been raised as to whether the change in hospital payment policy may have contributed to the shortage. This study is intended to determine the extent to which Medicare hospital payment policies may be linked to a shortage of nurses. If a link is found, the study will examine policy options to ameliorate the shortage. The analysis will include nurses' labor market behavior, the substitution of registered nurses for licensed practical nurses, the impact of changing case mix and declining volume on demand for nurses, and the impact of Medicare payment policy.

Status: The study is in the early developmental stage.

Learning From and Improving Diagnosis-Related Groups for End Stage Renal Disease Patients

Project No.: 14-C-98596/3-02
Period: September 1984-September 1988
Funding: $ 375,000
Award: Cooperative Agreement
Awardee: The Urban Institute
Health Policy Center
2100 M Street, NW.
Washington, D.C. 20037
Project Officer: Paul W. Eggers
Division of Beneficiary Studies

Description: This study addressed how the implementation of the Medicare prospective payment system (PPS) for hospital inpatient care affected the Medicare End Stage Renal Disease (ESRD) program, ESRD providers, and ESRD patients. The main issues of

concern were hospital utilization and program spending, together with patient access to care and quality. The project conducted numerous interrelated analyses of primary Medicare data on services to ESRD and other beneficiaries.

Status: The main findings were:

- For use of hospital services by ESRD beneficiaries, as measured in the first years following the initiation of PPS: admission rates remained unchanged and hospital days per time at risk decreased somewhat. However, the overall trend in hospital days was downward in any case, and PPS probably added somewhat to the downward trend.
- Hospital reimbursements by the Health Care Financing Administration per patient day at risk were generally upward during the period 1983-84, especially when cost-passthroughs were considered.
- Hospitals readmission rates by ESRD beneficiaries were not increased as a consequence of PPS.
- ESRD patient mortality did not increase as a consequence of PPS.
- Patients' access to hospital care seems minimally affected by PPS, at least as measured by the relative share of care given by hospitals serving ESRD patients before and after PPS.

Papers produced from this study include:

- Held, P.J., Pauly, M.V., and Diamond, L.H.: Survival analysis of patients undergoing dialysis. *Journal of the American Medical Association*, 257(5):645-50, February 6, 1987.
- Bovbjerg, R.R., Held, P.J., and Pauly, M.V.: Learning From and Improving on DRGs Under PPS for ESRD Patients. Special Status Report. Washington, D.C. Urban Institute, October 1986.
- Held, P.J., Pauly, M.V., Bovbjerg, R.R., Newmann, J.M., and Salvatierra O.: Access to kidney transplantation—Has the United States eliminated income and racial differences? *The Archives of Internal Medicine*, 148:2594-2600, December 1988.
- Held, P.J., Levin, N.W., Bovbjerg, R.R., and Pauly, M.V.: One-Year Mortality, New ESRD Patients 1981-1985. (3293-25). The Urban Institute, June 1987.
- Held, P.J., Pauly, M.V., and Bovbjerg, R.R.: Savings From Home Dialysis: Far Less than Expected. (3293-13). The Urban Institute, April 1986.
- Held, P.J., Bovbjerg, R.R., Pauly, M.V., and Diamond, L.H.: Medicare Spending for ESRD Patients: Where Have All the Part B's Gone? (3293-11). The Urban Institute, May 1986.
- Held, P.J., and Pauly, M.V.: Large and Small Kidney Transplant Programs: Implications for Cost and Outcomes. (3292-22). The Urban Institute, October 1986.
- Newmann, J.M., Held, P.J., and Garcia J.: The Changing Profile of End Stage Renal Disease Patients, 1977-1984. (3292-19). The Urban Institute, October 1986.
- Held, P.J., and Pauly, M.V.: Patient Severity Measures and Their Impact on Medicare Costs in the ESRD Program.

The final report, "Learning From and Improving Diagnosis-Related Groups for End Stage Renal Disease Patients," is available from the National Technical Information Service, accession number PB90-127176.

Determinants of Hospital Costs and Their Growth

Project No.:	99-C-98489/9-06
Period:	August 1989-July 1990
Funding:	$ 82,896
Award:	Cooperative Agreement
Awardee:	The RAND Policy Research Center (See page 77)
Task Leader:	Edgar A. Peden Division of Reimbursement and Economic Studies

Description: The purpose of this project is to describe and analyze the changes in average cost per Medicare hospital case for 1984 through 1987. The analyses will include an assessment of the contribution of changes in technology, case mix, the intensity of inputs used to provide given services, input prices, and windfall profits (i.e., profits realized in the first 2 years of the prospective payment system). RAND will conduct its analyses using data from a 20 percent sample of Medicare patient bills and Medicare cost reports for all hospitals during this period. RAND will also analyze patient discharge data from a sample of California hospitals to study the effect of changes in intensity on average cost per Medicare hospital case.

Status: The study is in the early developmental stage.

Changes in Hospital Wages Since Implementation of the Prospective Payment System

Project No.:	17-C-99500/1-01
Period:	October 1989-March 1991
Funding:	$ 179,384
Award:	Cooperative Agreement
Awardee:	Health Economics Research Inc. Hillsite Office Building 75 Second Avenue, Suite 100 Needham Mass. 02194
Project Officer:	Edgar A. Peden Division of Reimbursement and Economic Studies

Description: This project, using the Health Care Financing Administration's (HCFA) wage surveys from 1982 to 1988, supplemented by HCFA's annual surveys and the Bureau of Labor Statistics Industry Wage Surveys, will look at hospital cost inflation that results from increases in labor costs. Labor costs comprise over half of all hospital costs. These costs have changed as a result of changes in hospital occupation mix, wage changes in comparable industries, changes in labor productivity, as well as changes in inpatient volumes and in the general inflation level. This project will be used to investigate linkages of these factors to changes in labor costs.

Status: The study is in the early developmental stage.

Financial Impact of Prospective Payment System on Hospitals

Prospective Payment System Impacts on Rural Hospitals

Project No.: 17-C-99102/1-01
Period: June 1987-September 1989
Funding: $ 331,817
Award: Cooperative Agreement
Awardee: Center for Health Economics Research
75 Second Avenue, Suite 100
Needham, Mass. 02194
Project Officer: Philip G. Cotterill
Division of Reimbursement and Economic Studies

Description: This project conducted descriptive analyses and econometric estimation of factors that lead to financial problems for rural hospitals. Case studies focusing on a description of the rural hospital environment, the problems faced by rural hospitals, and their responses to these problems were conducted in nine areas across the country. The work included a review of the literature on the economics of rural hospitals, the development of a behavioral model of rural hospitals' financial performance, a comparative analysis of rural hospital performance from 1980 to 1986, a determination of the factors that have caused changes in rural hospitals' performance, and assistance in the development of options for revising the payment of rural hospitals, if necessary.

Status: The final report is entitled "The Prospective Payment System's Impact on Rural Hospitals." Some findings from the study are:

- Today's problems of rural hospitals are not new; declining occupancy rates and reduced patient revenues, constrained resources for capital financing, rapid technological change and increasingly complex medical services, and shortages of health professionals all have been pointed to as reasons for the problems of rural hospitals since the 1970s.
- Under the prospective payment system (PPS), inpatient utilization trends have played a major role in determining the performance of both urban and rural hospitals.
- Volume declines pose a larger problem for rural than for urban hospitals.
- Increases in total cost per discharge were strongly related to discharge declines.
- Profit margins have declined more for rural than for urban hospitals.
- Despite declining profit margins for both rural and urban hospitals, Medicare margins have remained above total profit margins during the first 3 years of PPS.
- Giving the urban base rate to rural hospitals with 2 or more years of large losses would not have raised these hospitals above an 85-percent total margin.

Discharge declines also appear to have contributed directly to hospital closures in the post-PPS period. Closures of both rural and urban hospitals are concentrated among hospitals with fewer than 50 beds. The majority of rural hospitals that closed were located in counties with other acute care hospitals. Rural closures are disproportionately investor-owned.

Data for Hospital Cost Monitoring and Analysis of Hospital Costs

Project No.: 500-87-0039
Period: January 1987-December 1991
Funding: $ 551,900
Award: Contract
Contractor: American Hospital Association
840 North Lake Shore Drive
Chicago, Ill. 60611
Project Officer: Kathleen K. Walker
Division of Reimbursement and Economic Studies

Description: The Health Care Financing Administration (HCFA) will receive from the American Hospital Association the output from its National Hospital Survey Panel and Annual Survey of Hospitals for fiscal years 1987-91. These data will serve as a prime source of outside data on the performance of hospitals and will be used in HCFA analyses, research, and publications.

Status: To date, HCFA has received the Annual Survey of Hospitals for fiscal years 1987 and 1988, monthly *National Hospital Panel Survey Reports*, and monthly *Community Hospital Statistics* through March 1989, which are available only from the American Hospital Association.

Prospective Capital Payment: Refinements and Impacts

Project No.: 17-C-99232/1-01
Period: July 1988-July 1990
Funding: $ 200,000
Award: Cooperative Agreement
Awardee: Center for Health Economics Research
75 Second Avenue, Suite 100
Needham, Mass. 02194
Project Officer: Fred G. Thomas
Division of Reimbursement and Economic Studies

Description: Congress imposed a moratorium on prospective capital payment because of concerns about why some hospitals were projected to be big losers under the proposed fiscal year 1988 prospective capital payment system. This project will be used to examine the proposed policy and to develop and evaluate potential refinements.

Status: Work on this project was delayed to facilitate the completion of analyses of the construction cost index and occupancy rate adjustments. During the first year, a pilot test was conducted of phone interviews with hospital administrators and chief financial officers. A decision was later made that no further phone interviews

would be conducted. However, additional analyses are being planned.

Hospital Occupancy Rates: Impact on Capital Expenditures

Project No.: 99-C-98526/1-05
Period: May 1988-April 1989
Funding: $ 62,866
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: Fred G. Thomas
Division of Reimbursement and Economic Studies

Description: The current formula bases Medicare capital payments on the program's share of the hospital's total capacity, compared with a measure for used or occupied capacity. As a result, Medicare hospital capital payment can increase even when the number of hospital admissions decreases. This project was an examination of the financial impact on hospitals and the Medicare Trust Fund of developing allowable occupancy thresholds that allow Medicare payment to be based on hospital capacity. The project limited its examination on occupancy rates to inpatient hospital care.

Status: One paper has been published:

- Hemesath, M., and Pope, G.C.: Linking Medicare capital payments to hospital occupancy rates. *Health Affairs*, Vol. 8, No. 3, Fall 1989.

The final report, "Evaluation of Alternative Occupancy Adjustments for Medicare Capital Reimbursement," is expected to be available from the National Technical Information Service in early 1990. In the final report, the authors concluded that a more equitable policy would link payment amounts to the degree of capacity utilization. Such a policy would encourage reductions in unused capacity while not penalizing heavily used facilities.

Hospital Capital Construction Cost Index

Project No.: 99-C-98526/1-05
Period: May 1988-February 1989
Funding: $ 47,777
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: Fred G. Thomas
Division of Reimbursement and Economic Studies

Description: The objective of this project was to develop and refine alternative geographic construction cost indexes. These indexes were evaluated in the light of the attributes of a desirable cost index. These attributes include: face validity, reliability, and the cost of a uniform mix of construction across different areas.

Status: The final report, "Refinement of HCFA's Area Construction Cost Index," was received in February 1989, and is available from the National Technical Information Service, accession number PB89-191191. The alternative index suggested by this study measures the change in construction input prices, as opposed to the output index developed by the Health Care Financing Administration (HCFA). The index is based on commercially available data that are widely used for cost estimations by the insurance and construction industries.

Rural Hospitals

Rural Secondary Specialty Center Demonstration Project

Project No.: 95-P-99142/5-01
Period: October 1986-September 1989
Award: Grant
Grantee: Lake Region Hospital and Nursing Home
712 South Cascade
Fergus Falls, Minn. 56537
Project Officer: Victor G. McVicker
Division of Hospital Experimentation

Description: This project is to test the use of a new classification of rural hospitals to be called rural secondary specialty centers. This group of hospitals would be classified separately from regional referral centers and sole community provider hospitals. The hospitals meeting the criteria for inclusion in this new classification would be reimbursed in the same manner as regional referral centers. Under this 3-year project, Lake Region Hospital would be treated as a rural secondary specialty center (i.e., its payments would be the same as a regional referral center). The purpose of the demonstration project is to determine the effect of this modified payment system on Medicare Part A expenditures and the access of Medicare beneficiaries who reside in the area to Medicare-covered services. Information obtained from this project will be used to prepare a Report to Congress on the subject.

Status: This demonstration project was completed in September 1989. Mathematica Policy Research conducted an evaluation of this project and submitted the final report in August 1989. The major findings are listed under the evaluation writeup that follows.

Rural Secondary Specialty Center Demonstration Evaluation

Project No.: 500-87-0028
Period: September 1987-August 1989
Funding: $ 159,212
Award: Technical Support:
Evaluation of Demonstrations
(See page 80)
Contractor: Mathematica Policy Research
P.O. Box 2393
Princeton, N.J. 08543-2393
Project Officer: Victor G. McVicker
Division of Hospital Experimentation

Description: Mathematica Policy Research (MPR) conducted an evaluation of the rural secondary specialty center demonstration. The specific evaluation tasks undertaken were:

- Identifying the number of rural hospitals across the country that would meet the proposed criteria for a rural secondary specialty center and the dollar impact of paying them at the higher urban rate.
- Determining the potential impact on Medicare programmatic outlays for the potential closing or restriction of services at the Lake Region Hospital and Nursing Home.
- Assessing the impact of the demonstration on the access of Medicare beneficiaries located in rural areas to quality health care.
- Comparing the severity of discharges at Lake Region Hospital with groups of discharges from urban and rural hospitals.
- Assessing the impact of the demonstration on the hospital's profitability and the subsidy of non-Medicare patients.

Information obtained from this study will be used to prepare a Report to Congress on the rural secondary specialty center demonstration.

Status: MPR submitted the evaluation final report in August 1989. The major findings of that evaluation are:

- Based on the criteria proposed, a new rural classification for hospitals under Medicare is not warranted.
- Part A expenditures to Lake Region Hospital increased by more than $900,000 for fiscal year 1988, and if the rural secondary specialty center classification had been implemented nationwide, Part A expenditures could have been more than $16 million higher in fiscal year 1988.
- Access for Medicare beneficiaries would be negatively affected by the closure of Lake Region Hospital. However, there is no evidence that the hospital is in financial trouble and either would close or stop providing medical services to Medicare patients.

Medical Assistance Facility Demonstration Project

Project No.:	95-C-99292/8-02
Period:	June 1988-June 1992
Funding:	$ 232,015
Award:	Cooperative Agreement
Awardee:	Montana Hospital Research and Education Foundation P.O. Box 5119 Helena, Mont. 59604
Project Officer:	Victor G. McVicker Division of Hospital Experimentation

Description: The Montana Hospital Research and Education Foundation (MHREF) is designing and planning to conduct a demonstration of the utility and desirability of medical assistance facilities (MAFs) as a new type of frontier health care facility. The Montana legislature recently created the MAF, which is a new category of licensure for health care facilities providing low-intensity acute care services to short-term inpatients. MAF licensure would provide small frontier hospitals with a downsizing option that is currently not available. MAFs are intended to maintain frontier accessibility to basic acute and emergency care services and would provide inpatient care before transport to a hospital or for no longer than 96 hours. These facilities will be located in counties with fewer than 6 residents per square mile or in areas more than 35 miles from the nearest hospitals. This 4-year project consists of two phases. Phase I is a feasibility study during the first year to address the technical issues, including the payment formula, services covered, and design of a project evaluation. Phase II is the implementation, operation, and evaluation of the demonstration.

Status: During Phase I, MHREF invited 23 hospitals, (20 beds or smaller and more than 35 miles from the next nearest hospital), to participate in the demonstration. A total of 11 hospitals responded, but 1 eventually withdrew. MHREF selected 9 applicants for final consideration. Of these, 3 applicants chose to become demonstration sites in year one and 6 decided to participate as comparison sites. Issues MHREF and the Health Care Financing Administration will have to resolve before proceeding with the waiver request are conditions for hospital participation, the certification requirements, and the payment methodology.

Review of Montana Medical Assistance Facility Demonstration Project

Project No.:	99-C-99169/5-01
Period:	August 1988-July 1989
Funding:	$ 54,883
Award:	Cooperative Agreement
Awardee:	University of Minnesota Research Center (See page 79)
Task Leader:	Victor G. McVicker Division of Hospital Experimentation

Description: Under this project, the University of Minnesota provided support and analysis for a demonstration being conducted by the Montana Hospital Research and Education Foundation involving a new type of health care facility called a medical assistance facility (MAF). The MAFs provided inpatient care for up to 96 hours, or care needed prior to the transfer of a patient to a hospital. The purpose of the demonstration was to compare MAFs with hospitals to evaluate the quality of service, cost of service, and profitability of these institutions under the prospective payment system. The University of Minnesota's support included preparing a paper describing the policy issues associated with MAFs, designing the evaluation for the demonstration, and preparing a paper that discusses alternative approaches to quality assurance in MAFs.

Status: Work on this project has been completed. The following papers were produced:

- Christianson, J.B.: Institutional alternatives to the rural hospital: Organizational and public policy

issues. *Health Care Financing Review*, Vol. 11, No. 3. HCFA Pub. No. 03295. Office of Research and Demonstrations, Health Care Financing Administration. Washington. U.S. Government Printing Office, Spring 1990.
- "Quality Assurance and the Montana Medical Assistance Facility" is expected to be available from the National Technical Information Service by April 1990.

Medical Assistance Facility Certification Criteria

Project No.: 99-C-99169/5-02
Period: August 1989-July 1990
Funding: $ 44,256
Award: Cooperative Agreement
Awardee: University of Minnesota Research Center
(See page 79)
Task Leader: Victor G. McVicker
Division of Hospital Experimentation

Description: The primary purpose of this project is to explore the implications of using different types of remoteness criteria to identify the number of rural hospitals that could conceivably qualify as medical assistance facilities (MAFs) or other limited service inpatient facilities. The secondary purpose of the project is to provide the Health Care Financing Administration (HCFA) with a description of the number and types of existing rural hospitals that would be most interested in converting to MAF status, should such status become available. The analysis will provide HCFA with an indication of how many rural hospitals might become MAFs under different sets of assumptions.

Status: This project is in the early developmental stage.

Rural Health Transition Grant Evaluation

Project No.: 500-87-0028
Period: June 1989-May 1992
Funding: $ 603,753
Award: Technical Support:
Evaluation of Demonstrations
(See page 80)
Contractor: Mathematica Policy Research, Inc.
P.O. Box 2393
Princeton, N.J. 08546-2393
Task Leader: Kathleen M. Farrell
Division of Hospital Experimentation

Description: This project is mandated under section 4005(e) of Public Law 100-203. Under this mandate, the contractor will perform both pre-award and post-award functions that include:
- Conducting initial reviews, grouping, and abstracting of proposals submitted for rural health transition grants and mailing award notices to grantees.
- Monitoring a sample of grantees to determine that grants are being expanded for the purposes for which they were made.
- Conducting an evaluation of the projects funded.
- Reporting to the Health Care Financing Administration the results of the monitoring, the perceived needs of rural hospitals, and the evaluation of the projects.

Status: The contractor has completed all pre-award functions and is in the process of developing its monitoring plan.

Examination of Excluded Hospital Payment Methodologies

Developing and Evaluating Options for Pediatric Prospective Payment Systems

Project No.: 18-C-99093/1-02
Period: June 1987-April 1990
Funding: $ 340,000
Award: Cooperative Agreement
Awardee: Boston University Hospital
Health Care Research Unit
75 East Newton Street
Boston, Mass. 02118
Project Officer: John T. Petrie
Division of Reimbursement and Economic Studies

Description: This study is designed to evaluate the pediatric-modified diagnosis-related groups (PM-DRGs) developed by the National Association of Children's Hospitals and Related Institutions under an earlier Health Care Financing Administration-funded cooperative agreement. In addition, researchers will develop the adjustments (e.g., teaching hospitals) to a prospective payment system (PPS) that might be required for Medicare or State Medicaid programs to implement a PPS for pediatric hospital services. The work under this project will extend early evaluation of PM-DRGs to additional State data bases with birth weight and, under a subcontract with the National Perinatal Information Center at the Women and Infant's Hospital in Providence, Rhode Island, to a national data base to which ventilator time will also be appended. The project expands the analysis of the equity of proposed PPS options for tertiary hospitals and for hospitals treating a large share of Medicaid children. The PPS options for consideration by Medicare and State Medicaid programs will also be formulated.

Status: Data files and the PM-DRG grouper software continue to be analyzed. A 4-month extension was granted to the researchers. A final report is expected by late-Summer 1990.

Analysis of the Tax Equity and Fiscal Responsibility Act for Reimbursement of Excluded Hospitals Under the Prospective Payment System

Project No.: 99-C-98526/1-06
Period: July 1989-January 1990
Funding: $ 34,902
Award: Cooperative Agreement

Awardee: Brandeis University Research Center
(See page 78)
Task Leader: Alvin L. Freedman
Division of Reimbursement and Economic Studies

Description: This project will be an evaluation of the financial impacts of the Tax Equity and Fiscal Responsibility Act (TEFRA) on hospitals excluded from the Medicare prospective payment system. The analyses will focus on the actual costs, target amounts, incentive payments, and gains or losses for these facilities, with special emphasis on identifying those facility types that are doing well or poorly under TEFRA. Financial information will be stratified by type of specialized facility, and urban/rural and census region locations.

Status: Literature search has been initiated, and file construction that summarizes utilization and cost information for each type of excluded facility has begun. A final report is expected in early 1990.

Case-Mix Studies

Diagnostic Mix, Illness Severity, and Costs in Teaching and Nonteaching Hospitals

Project No.: 15-C-98835/1-02
Period: September 1985-September 1988
Funding: $ 558,188
Award: Cooperative Agreement
Awardee: Boston University Hospital
Health Care Research Unit
75 East Newton Street
Boston, Mass. 02118
Project Officer: Fred G. Thomas
Division of Reimbursement and Economic Studies

Description: This project will investigate the relationship between case mix and costs in teaching and nonteaching hospitals. It will address two major questions with important policy implications:

- Are there significant, systematic differences between teaching and nonteaching hospitals in the complexity of diagnoses and severity of illness within diagnosis-related groups (DRGs)?
- Once one has controlled for diagnostic complexity and illness severity, how much cost differential remains between teaching and nonteaching hospitals?

The analyses will be based on the results of 4,500 indepth chart reviews at 15 metropolitan Boston hospitals (5 major teaching, 5 minor teaching, and 5 nonteaching institutions). The study will review cases in 8 DRG clusters, representing common diagnoses in all 15 hospitals. Each DRG cluster has its own medical record abstraction form, designed by Boston University physicians and their clinical consultants. The forms incorporate the acute physiology and chronic health evaluation severity measurement tool as well as diagnosis-specific elements taken from the clinical and case-mix literature. Per-case costs will be obtained from each hospital's fiscal year 1985 case mix and charge tapes submitted annually by legal mandate to the Commonwealth of Massachusetts Ratesetting Commission. This study method was designed to overcome the limitations of prior research by studying a larger sample of hospitals and conditions using objective, clinically based severity measures.

Status: The final report entitled "Diagnostic Mix, Illness Severity, and Costs at Teaching and Nonteaching Hospitals" was received in February 1989 and is available from the National Technical Information Service, accession number PB89-184675. In only one of eight study conditions (bronchitis and asthma) were the severity levels for older patients clearly greater in teaching hospitals. In four conditions comprised exclusively of older patients, there were no differences in severity between teaching and nonteaching hospitals. After adjusting for severity levels and other patient characteristics, costs were highest in tertiary teaching hospitals for six study conditions and lowest in nonteaching hospitals for five conditions.

Analysis of Case-Mix Growth Among Hospitals

Project No.: 99-C-98489/9-05
Period: May 1988-July 1989
Funding: $ 263,856 (Prospective Payment Assessment Commission's share of funding is $ 100,000)
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center
(See page 77)
Task Leader: Timothy F. Greene
Division of Reimbursement and Economic Studies

Description: The case-mix index (CMI) measures the relative costliness of a group of Medicare patients. Theoretically, increases in the CMI can be separated into "real" increases and coding changes. Real increases are caused by increases in the severity of illness in the patient population or by changes in the treatment patients receive. This study was intended to separately measure changes in the CMI resulting from real and coding changes. SysteMetrics/McGraw Hill, a subcontractor to the project, abstracted a representative sample of Medicare hospital discharges for this analysis.

Status: RAND analyzed a subset of 9,234 cases covering roughly 2 years of peer review organization (PRO) review. RAND used an innovative methodology to partition changes in CMI into increases from coding changes, increases from changes in the grouper software that assigns cases to specific diagnosis-related groups, and real increases that reflected a more complex mix of cases in hospitals. The principal finding is that approximately two-thirds of the 1986-87 increase in the CMI represents real change, while the remainder is attributable to changes in coding practices and changes in grouper software. These findings are described in the report, "How Much Change in the Case-Mix Index is DRG Creep?" The report is available from RAND (Report R-3826-HCFA).

Measuring Components of Case-Mix Change

Project No.: 99-C-98489/9-06
Period: August 1989-March 1990
Funding: $ 189,666 (Prospective Payment Assessment Commission's share of funding is $ 76,000)
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center (See page 77)
Task Leader: Timothy F. Greene
Division of Reimbursement and Economic Studies

Description: The case-mix index (CMI) measures the relative costliness of a group of Medicare patients. Theoretically, increases in the CMI can be separated into real increases or coding changes. Real increases are caused by increases in the severity of illness in the patient population or by changes in the treatment patients receive. This study will separately measure changes in the CMI from 1987 to 1988 that result from real and coding changes. As a subcontractor to the project, SysteMetrics/McGraw Hill will abstract a sample of Medicare hospital discharges for this analysis.

Status: The study is in the early developmental stage. It is anticipated that this study will be similar to the RAND study, "Analysis of Case-Mix Growth Among Hospitals," conducted in 1988-89, that covers the increase in the CMI from 1986 to 1987.

Catastrophic Coverage Studies

Determining the Appropriateness of Reclassifying a Ventilator-Dependent Unit as a Rehabilitation Unit for Purposes of Reimbursement

Project Nos.: 29-P-99424/5-01; 29-P-99397/5-01; 29-C-99404/1-01; 29-P-99408/3-01; 29-P-99401/3-01
Period: October 1989-September 1992
Award: Waiver only
Awardees: Mayo Foundation, St. Mary's Hospital, Rochester, Minn.
RMS Health Providers, Joint Venture of Suburban Hospital/Rush Presbyterian Hospital, Chicago, Ill.
Rhode Island Hospital, Providence, R.I.
Sinai Hospital of Detroit, Detroit, Mich.
Temple University Hospital, Philadelphia, Pa.
Project Officer: Thomas Talbott
Division of Hospital Experimentation

Description: The demonstration was mandated under the Medicare Catastrophic Coverage Act of 1988 (Public Law 100-360), to determine the appropriateness of reclassifying ventilator-dependent units in hospitals as rehabilitation units for purposes of reimbursement. A comparison will be made of the cost of the services, quality of care, outcome, treatment patterns, etc., for each of the demonstration sites as well as the selected alternative sites in an effort to study modifications in reimbursement policy.

Status: Each awardee has submitted a waiver cost estimate which must be approved by the Health Care Financing Administration and the Executive Office of Management and Budget. An analysis of their submissions is being performed.

Evaluation of the Ventilator-Dependent Unit Demonstration

Project No.: 500-87-0029
Period: October 1989-September 1993
Funding: $ 773,815
Award: Technical Support: Evaluation of Demonstrations (See page 80)
Contractor: Lewin/ICF
1090 Vermont Avenue, NW., Suite 700
Washington, D.C. 20005
Task Leader: Thomas Talbott
Division of Hospital Experimentation

Description: This project will evaluate five competitively selected demonstration sites as well as various other settings providing care for chronic ventilator-dependent patients, including skilled nursing homes, long-term hospitals, and rehabilitation facilities, to determine the appropriate payment method and site of care. It is an industry concern that treating ventilator-dependent patients in hospitals is labor intensive and the cost of the service often exceeds the present-day payment system under prospective payment. The evaluation will attempt to gather sufficient data from a representative sample of hospitals as well as the five demonstration sites to provide answers to such policy concerns as overall cost of care, quality, treatment patterns, and appropriate site of care.

Status: The initial design work is under way. Initial tasks are to revise waiver cost estimates from the demonstration sites and to write a literature review of ventilator care issues.

Other Studies

Health Care for Poor and Rural Hospital Patients

Project No.: 99-C-98489/9-06
Period: August 1989-July 1990
Funding: $ 115,334
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center (See page 77)
Task Leader: Brigid Goody
Division of Reimbursement and Economic Studies

Description: This project will be used to analyze how rural and inner city residents differ from other hospitalized Medicare patients with respect to quality of care, as measured by processes and outcomes adjusted

for sickness at admission. The study is an extension of existing research that identifies gross differences in care between rural and inner city patients.

Status: The study is in the early developmental stage.

Access to Care in Rural and Inner City America

Project No.: 17-C-99498/1-01
Period: September 1989-September 1991
Funding: $ 166,934
Award: Cooperative Agreement
Awardee: Center for Health Economics Research
75 Second Avenue, Suite 100
Needham, Mass. 02194
Project Officer: John T. Petrie
Division of Reimbursement and Economic Studies

Description: This project is designed to examine changes in utilization trends for 1985 through 1989 in the catchment areas of 18 hospitals that closed inpatient services during 1986-87. The researchers expect to determine whether closures significantly limit access to care for Medicare beneficiaries. In particular, they will examine the following aspects of health care utilization:

- Where patients obtain health care before and after hospital closures.
- The effects of hospital closures on utilization rates and on the place of care.
- The relationship between the use of physician services and changes in the availability of inpatient services.
- The impact of hospital closure on per capita Medicare expenditures, out-of-pocket costs, and travel distance to inpatient care.

Status: The study is in the early developmental stage.

Hospital Closures, Financial Status, and Access to Care: A Rural and Urban Analysis

Project No.: 17-C-99499/3-01
Period: September 1989-September 1991
Funding: $ 193,944
Award: Cooperative Agreement
Awardee: Georgetown University
37th and O Streets, NW.
Washington, D.C. 20057
Project Officer: Brigid Goody
Division of Reimbursement and Economic Studies

Description: This project addresses two questions: Why do hospitals close and how do closures affect access? A hospital-level analysis will be done to examine factors that cause hospitals to close. Closed hospitals will be compared with similar hospitals that remain open with respect to admissions, costs, Medicare and non-Medicare revenues, Medicare patients, and patterns of care. Separate analyses will be conducted for rural and urban areas to identify factors unique to each type of community. A patient-level analysis will compare patients of closed and open hospitals along the following dimensions: diagnostic mix, severity of illness, and patterns of care. In addition, these two groups of patients will be compared to determine whether closure has an adverse effect on access to or outcome of care.

Status: The study is in the early developmental stage.

Program Efficiencies, Analyses, and Refinements

Clinical Laboratory Services

Demonstration and Evaluation of Competitive Bidding as a Method to Purchase Clinical Laboratory Services

Project No.: 500-85-0052
Period: September 1985-September 1989
Funding: $ 1,509,605
Award: Contract
Contractor: Abt Associates, Inc.
55 Wheeler Street
Cambridge, Mass. 02138
Project Officer: Paul A. Gurny
Division of Hospital Experimentation

Description: The project will test the feasibility of using competitive bidding as a method to purchase clinical laboratory services in specific areas. The contractor will provide the Health Care Financing Administration with considerable information on whether the current Medicare fee schedule for clinical laboratory tests is set at a proper level. The project consists of three phases:

- Phase I. Design the bidding model, and prepare bidding documents.
- Phase II. Administer the bidding systems.
- Phase III. Evaluate the demonstration.

The total time for the demonstration is 4 years.

Status: The contract for this outpatient clinical laboratory competitive-bidding demonstration and evaluation was awarded in September 1985. The demonstration design report has been completed. The remaining segments of Phase I will be completed by December 1989. Moratoriums imposed by Congress have delayed implementation of the demonstration until January 1, 1990. A decision on whether to proceed with implementation will depend on a review and approval of the final design by the Health Care Financing Administration.

Durable Medical Equipment Services

Durable Medical Equipment

Project No.: 99-C-98489/9-05
Period: May 1987-July 1989

Funding: $ 48,205
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center
(See page 77)
Task Leader: Phyllis L. Morical
Division of Hospital Experimentation

Description: Durable medical equipment (DME) is reimbursed under Part B of the Medicare program and is subject to customary, prevailing, and reasonable charge guidelines. This project is intended to analyze variations in Medicare payments for high-cost DME items within and across Medicare carrier markets.

Status: Completion of this project has been delayed because of problems encountered in linking the 1985 Part B Medicare annual data (BMAD) procedure file with the prevailing charge file. As a result, RAND has substituted the 1986 BMAD data files to complete the project. A draft report has been received and is under review.

Evaluation of Medicare Expenditures for Durable Medical Equipment

Project No.: 17-C-99215/1-01
Period: July 1988-January 1990
Funding: $ 152,143
Award: Cooperative Agreement
Awardee: Center for Health Economics Research
75 Second Avenue, Suite 100
Needham, Mass. 02194
Project Officer: Phyllis L. Morical
Division of Hospital Experimentation

Description: The research being conducted is intended to provide the Health Care Financing Administration with information on whether Medicare is paying fair market rates for durable medical equipment (DME). Little is known about how Medicare carriers have implemented DME reimbursement policies, the effects of these policies on DME reimbursement, geographic variation in DME expenditures and utilization, and rental rates of return for DME. This project is designed to study and address these issues.

Status: This project was extended because the Center for Health Economics Research was using Part B Medicare annual data files for 1984 through 1986 for a descriptive trend analysis; those files are quite inconsistent from year to year, creating a larger task than anticipated. Work is complete on a carrier survey of application of inherent reasonableness guidelines, and work continues on analyzing aspects of DME utilization and reimbursement in a 10-State sample. The 10 States are Alabama, Arkansas, Connecticut, Georgia, Kansas, Oklahoma, Oregon, Pennsylvania, Washington, and Wisconsin.

Demonstration and Evaluation of Competitive Bidding as a Method of Purchasing Durable Medical Equipment

Project No.: 500-85-0050
Period: September 1985-September 1990
Funding: $ 1,489,661
Award: Contract
Contractor: Abt Associates, Inc.
4800 Montgomery Lane
Bethesda, Md. 20814
Project Officer: Phyllis L. Morical
Division of Hospital Experimentation

Description: The contractor will test the feasibility of using competitive bidding as a method of establishing the prices Medicare pays for durable medical equipment. The contractor will provide the Health Care Financing Administration (HCFA) with considerable information on whether the current payment levels for durable medical equipment are properly set. The project consists of three phases:

- Phase I. Design the bidding model, select demonstration sites, and prepare bidding documents.
- Phase II. Administer the bidding systems.
- Phase III. Evaluate the demonstration.

The total time of the project is 5 years.

Status: The Omnibus Budget Reconciliation Act (OBRA) of 1987 established a new Medicare reimbursement system for durable medical equipment and respiratory therapy services (collectively known as DME), effective January 1989, and prohibited demonstrations of alternative reimbursement systems for DME until January 1, 1991. As a result of the changes in the reimbursement system, a revised scope of work was approved that shifted the focus to the development of simulation models of Medicare payments for DME that can be used to estimate HCFA's costs under alternative reimbursement systems, e.g., pre- and post-OBRA, and variations thereof. The contractor will examine the DME ratesetting approaches of other third-party payers (such as the Department of Veterans Affairs, private insurance companies, and health maintenance organizations) to determine which systems result in competitively set prices, and, of those, which could be adapted for HCFA's use in administering Medicare. The scope of work includes a survey to examine beneficiaries' access to DME and DME supplier services on billing and maintenance/repair of equipment, and a carrier jurisdictional study on the effect of HCFA's point of sale policy. The study will project the impact of changing jurisdictional alignments. With the exception of the revised activities listed, all work associated with the design, administration, and evaluation of a competitive bidding demonstration has been completed.

End Stage Renal Disease

Comparative Analysis of the Cost and Outcomes of Kidney Transplants

Project No.: 14-C-98564/0-03
Period: July 1984-December 1988
Funding: $ 1,171,684
Award: Cooperative Agreement
Awardee: Battelle Human Affairs Research Centers
4000 NE. 41st Street
Seattle, Wash. 98105
Project Officer: Paul W. Eggers
Division of Beneficiary Studies

Description: This is an observational study of the impact of cyclosporine on renal transplantation.

Status: A sample of 396 patients from five major transplant centers were studied in depth. Detailed information on outcomes (mortality, complications, and disability) and cost were collected on this sample and were analyzed in terms of major prognostic factors. In addition, extensive data of a medical/biologic and of a sociological nature were obtained. The participating transplant centers were University of California, San Francisco; Ohio State University; University of Pittsburgh; University of Texas, Houston; and University of Wisconsin. The final report has been received. Findings from the study are:

- Although cyclosporine is almost universally used in immunosuppressive therapy following cadaver kidney transplantation, there are two basic ways in which it is introduced. Under the "triple-drug" protocol, initial immunosuppression consists of azathioprine, prednisone, and antilymphocyte globulin, followed by cyclosporine about 1 week after transplant. Under the "double-drug" protocol, initial immunosuppression consists of cyclosporine and prednisone.
- Cyclosporine dosage was reduced for nearly all patients from initial hospital discharge through the first year post-transplant. For the triple-drug protocol, the cyclosporine dosage (mg/kg/day) was reduced from 8.9 at discharge to 3.5 at the end of the first year. For the double-drug protocol, the dosage was reduced from 14.1 to 4.9.
- The 1-year graft survival rates under the triple-drug regimen (89.2 percent) were significantly greater than under the double-drug regimen (71.6 percent). Other patient and donor characteristics were not significant.
- Episodes of renal dysfunction and adverse reactions were higher among the double-drug recipients than among the triple-drug recipients. However, rehospitalization rates did not differ between the two groups.
- Successful transplantation did not improve work status. Those who were working prior to transplantation tended to return to work. Those who were unemployed prior to transplantation tended to remain unemployed.
- Cause of renal failure had a major impact on work status, with diabetic patients having much lower employment levels than nondiabetic patients.
- Even though the patients in this study received their transplants prior to Medicare coverage of immunosuppression (1985 and 1986), almost all (97 percent) received assistance in paying for their drugs, most from private insurers.
- The average charge per transplant stay in this study was $41,046, compared with $33,000 for all kidney transplants in 1986.
- The 5-year immunosuppressive cost projections are lower than those suggested by published protocols. For the double-drug recipients, the study estimate was $22,000 versus $41,556 for the published protocols. For the triple-drugs recipients, the study estimate was $16,527 versus $44,698 for the published protocols.

The final report, "Comparative Analysis of the Cost and Outcomes of Kidney Transplants," is available from the National Technical Information Service, accession number PB90-126657.

Severity of Illness in End Stage Renal Disease Population in Northern Florida

Project No.: 14-C-98696/4-02
Period: September 1984-December 1988
Funding: $ 509,356
Award: Cooperative Agreement
Awardee: University of Florida
Grinter Hall
Gainesville, Fla. 32610
Project Officer: Paul W. Eggers
Division of Beneficiary Studies

Description: The purpose of this study was to develop and test measures of severity of illness that predict resource consumption levels in the end stage renal disease population. These measures were based on the acute physiology and chronic health evaluation (APACHE) system.

Status: Measures of physiologic function, dialysis treatment variations, measures of comorbidities, and socioeconomic and behavioral factors were collected on a sample of 560 patients in 7 hemodialysis facilities. Scaling and weighting indexes were developed for both patient severity and resource consumption. The final report has been completed and is expected to be available from the National Technical Information Service by mid-1990. Findings from the study are:

- The severity of illness instruments developed by this study predicted the outcomes of death, hospital days, and incremental resource consumption.
- There is no evidence that some facilities have a more severe case mix than other facilities.

End Stage Renal Disease Nutritional Therapy Study

Period: September 1984-August 1994
Award: Interagency Agreement

Agency: National Institutes of Health
National Institute of Diabetes and Digestive and Kidney Disease
Bethesda, Md. 20892
Project Officer: Arne H. Anderson
Division of Health Systems and Special Studies

Description: In accordance with the congressional mandate (Public Law 96-499), this study, known as the Modification of Diet in Renal Disease Study, is a multicenter cooperative clinical study designed to ascertain whether restriction of dietary protein and phosphorus and/or reduction of blood pressure well below the currently accepted target of 140/90 will reduce the rate of progression of chronic renal disease regardless of the nature of the primary underlying process. The study is being conducted jointly by the National Institutes of Health (NIH) and the Health Care Financing Administration (HCFA).

Status: Phase I, the developmental phase, began in September 1984 and concluded in December 1985. This phase produced a clinical protocol, forms manual, and operation manual. Phase II, a 2-year pilot study, began in January 1986 at nine clinical sites. Phase III, the full-scale clinical study, began in January 1989 at 15 clinical sites and is to run until December 31, 1992. At the conclusion of this phase, NIH will determine to what extent the dietary restrictions and blood pressure reduction result in a reduced rate of progression of chronic renal disease. HCFA is responsible for conducting the cost-effectiveness component of the study if the therapy is found to be effective. The following questions will be addressed in the cost analysis to be conducted by HCFA:

- Is nutritional therapy cost effective in the treatment of patients in the study?
- Is nutritional therapy less costly to HCFA than the current payment for dialysis and transplantation?
- Is nutritional therapy under HCFA administratively feasible?
- Can the therapy be effectively managed?

Relative Effectiveness and Cost of Transplantation and Dialysis in End Stage Renal Disease

Project No.: 14-C-98372/5-04
Period: September 1983-April 1989
Funding: $ 1,811,126
Award: Cooperative Agreement
Awardee: University of Michigan
Department of Epidemiology
109 Observatory Street
Ann Arbor, Mich. 48109
Project Officer: Carl E. Josephson
Division of Program Studies

Description: This study will perform a comprehensive assessment of the cost effectiveness of end stage renal disease (ESRD) treatment under different treatment modalities, an assessment of the impact of cyclosporine on transplant success, and a life-table analysis of risk factors for patient and graft survival. The study will use data from the Michigan Kidney Registry, supplemented by survey information and medical record abstractions. Because of the design of the study, it is anticipated that the project will demonstrate the utility of a longitudinal, patient-specific data system for policy decisionmaking at the Federal level.

Status: Results from the three major research areas of quality of life, survival, and cost-effectiveness and the auxiliary studies on the Michigan Kidney Registry, and ethnic differences in diabetic ESRD, recovery from ESRD, and aspects of mortality and preventing ESRD and its sequelae will be included in the final report.

Cause and Failure to Transplant Cadaveric Human Organs

Project No.: 17-C-98728/1-01
Period: August 1986-July 1989
Funding: $ 699,740
Award: Cooperative Agreement
Awardee: Brandeis University
415 South Street
Waltham, Mass. 02254
Project Officer: Paul W. Eggers
Division of Beneficiary Studies

Description: This project will determine the reasons for the high rate of wastage of cadaveric kidneys in the United States and make recommendations to reduce this loss in the future.

Status: Instrument design and field testing have been completed. Organ procurement agencies have been selected and have agreed to participate in the study. Data collection began on January 1, 1988, and continued through December 31, 1988. At the end of the study, data were available on 3,503 kidneys with discard information on 181 kidneys. The final report is expected in Spring 1990. Analyses of initial data show:

- An overall wastage rate of 5.5 percent.
- Reasons for failure to transplant were anatomical abnormalities, 33 percent; donor/organ pathologies, 21 percent; surgical complications, 16 percent; preservation/perfusion problems, 11 percent; and all other reasons, 19 percent.

Predictors of Cost and Success in Kidney and Heart Transplantation

Project No.: 17-C-99183/0-01
Period: June 1988-June 1990
Funding: $ 200,000
Award: Cooperative Agreement
Awardee: Battelle Human Affairs Research Centers
4000 NE. 41st Street
Seattle, Wash. 98105
Project Officer: Lawrence E. Kucken
Division of Beneficiary Studies

Description: This project will examine the patient and organizational characteristics that determine successful

kidney and heart transplantation outcomes. Using multivariate life-table methods, data from the Medicare program will be combined with information from surveys of transplant facilities to construct a model of transplant facility effectiveness.

Status: Data preparation activities are currently under way. Publicity materials have been developed for distribution to transplant centers. Forms for primary data collection are being drafted, and secondary data tapes have been requested. A meeting of the technical advisory panel was held in June 1989. This committee's input was used in the design of the transplant center survey materials.

Impact of Payment Changes on Medicare: Case of End Stage Renal Disease

Project No.:	17-C-99021/3-03
Period:	June 1987-June 1990
Funding:	$ 510,000
Award:	Cooperative Agreement
Awardee:	The Urban Institute Health Policy Center 2100 M Street, NW. Washington, D.C. 20037
Project Officer:	Carl E. Josephson Division of Program Studies

Description: This project is part of an ongoing effort to monitor several components of Medicare's end stage renal disease (ESRD) program. The major thrust of this project will be to measure the impact of two recent reductions in the composite payment rate on access to and quality of care provided to ESRD patients. Information for this study will be derived from summaries of medical care records and other supplementary sources for past patients in both hospital-based and freestanding dialysis centers. The initial effort will concentrate on an assessment of the impact of the $12 reduction of the composite rate in 1983. This will include analysis of morbidity and mortality associated with ESRD in concert with the study mandated by Congress. This aspect was specified in Section 9335(b)(2) of the Omnibus Budget Reconciliation Act of 1986 (Public Law 99-509). As soon as the data become available, the same protocol will be followed to measure the impact of the additional $2 composite rate reduction instituted in 1986. Another issue under study in this project is the impact of dialyzer reuse on patient mortality, morbidity, and kidney transplantation, which is part of the Health Care Financing Administration's ongoing interest in measuring and tracking ESRD patient outcomes.

Status: An interim report was received and included in a Report to Congress, "Impact of the Changes in the End Stage Renal Disease Composite Rate." The report is available from the Superintendent of Documents, U.S. Government Printing Office, stock number 017-060-00311-1. The cost is $10 domestic; $12.50 foreign. The awardee is in the process of re-estimating the impact of the 1983 and 1986 composite rate changes on mortality and morbidity with the data being current through 1988. Additionally, other papers and topics in preparation include: impact of shorter time conventional dialysis, racial differences in outcomes of kidney transplants, a 10-year followup on the impact of dialyzer reuse on patient mortality, and the effects of cyclosporine on living related-donor kidney grafts.

Estimating Cost of Training for Self-Dialysis

Project No.:	99-C-98526/1-05
Period:	August 1988-February 1990
Funding:	$ 34,000
Award:	Cooperative Agreement
Awardee:	Brandeis University Research Center (See page 78)
Task Leader:	Carl E. Josephson Division of Program Studies

Description: The objective of this project is to develop a plan of analysis to estimate the cost of training end stage renal disease (ESRD) patients in performing self-dialysis. The basic approach will use an estimation of cost functions using the cost data supplied to the Health Care Financing Administration (HCFA) as part of the annual cost report. Other data under consideration include those from the Medicare Management Information Systems and claims information made available to HCFA researchers.

Status: The ESRD facility cost-based data were keyed and the data set linked to the ESRD program utilization and reimbursement files. Brandeis is presently analyzing the data and specifying the cost functions. A final report is expected in early 1990.

End Stage Renal Disease Annual Research Report

Funding:	Intramural
Project Director:	Paul W. Eggers Division of Beneficiary Studies

Description: These annual reports are designed to produce a wide range of data and analyses regarding the end stage renal disease program. Much of the data in these reports emphasize trends and comparisons over time, making these reports standard reference sources illustrating changes in the nature of the Medicare end stage renal disease population and in the pattern of treatment of this population.

Status: Published reports are:

- Health Care Financing Administration: *Research Report: End Stage Renal Disease, 1984.* HCFA Pub. No. 03221. Bureau of Data Management and Strategy. Washington. U.S. Government Printing Office, July 1986.
- Health Care Financing Administration: *Research Report: End Stage Renal Disease, 1985.* HCFA Pub. No. 03274. Bureau of Data Management and Strategy. Washington. U.S. Government Printing Office, September 1987.
- Health Care Financing Administration: *Research Report: End Stage Renal Disease, 1986.* HCFA Pub.

No. 03268. Bureau of Data Management and Strategy. Washington. U.S. Government Printing Office, December 1988.
- Health Care Financing Administration: *Research Report: End Stage Renal Disease, 1987.* HCFA Pub. No. 03288. Bureau of Data Management and Strategy. Washington. U.S. Government Printing Office, September 1989.

Complimentary copies of these reports, while supplies last, are available from the Health Care Financing Administration, Bureau of Data Management and Strategy, Office of Statistics and Data Management, Division of Information Analysis, Third Floor, Security Office Park Building, 6325 Security Boulevard, Baltimore, Maryland 21207. Telephone requests can be made to (301) 597-3933.

Data Development

Medicaid Tape-to-Tape: Data and Analysis

Project No.: 500-84-0037
Period: June 1984-December 1987
Funding: $ 2,813,421
Award: Contract
Contractor: SysteMetrics, Inc.
104 West Anapamu Street
Santa Barbara, Calif. 93101
Project Officers: David K. Baugh and Penelope L. Pine
Division of Program Studies

Description: This project was used for the development and implementation of a Medicaid person-level data set from the five State Medicaid Management Information Systems (MMIS) in California, Georgia, Michigan, New York, and Tennessee. The project acquired data on enrollment, claims, and providers for 1983 and 1984. These data were used to create uniform files, provide descriptive reports, support analysis and evaluation, and develop the methodology for online data analysis at a personal computer. This project provides a continuum of 5 years of uniform Medicaid data that have been used to conduct Medicaid research, analyze program management, evaluate policy alternatives, provide feedback to the States in the area of Medicaid financing, and produce congressionally mandated studies.

Status: Person-level enrollment, claims, and provider data were obtained from State MMIS. The data were processed to create uniform data sets for the participating States, and early return tabulations were designed to present data on mortality and diagnoses. The following publications are available:

- Health Care Financing Administration: Initial Findings from the Medicaid Tape-to-Tape Project: New York, 1981. Working Paper HCFA 87-2. Office of Research and Demonstrations, April 1987.
- Health Care Financing Administration: Findings from the Medicaid Tape-to-Tape Project: Michigan 1981-1983. Working Paper HCFA 88-3. Office of Research and Demonstrations, August 1988.
- Health Care Financing Administration: Recipients of covered services among Medicaid enrollees: Michigan and New York, 1981. *Health Care Financing Notes.* No. 3. Office of Research and Demonstrations, December 1984.
- Health Care Financing Administration: Medicaid: Use and cost of medical care by institutionalized recipients, New York and Michigan, 1982. *Health Care Financing Notes.* No. 7. Office of Research and Demonstrations, September 1987.
- Pine, P.L., Howell, E.M., and Buczko, W.: Hospital utilization and expenditures for Medicaid enrollees by major diagnosis group. *Health Care Financing Review.* HCFA Pub. No. 03240. Health Care Financing Administration. Office of Research and Demonstrations. Washington. U.S. Government Printing Office, Fall 1987.
- National Center for Health Statistics: On-line data access—The Medicaid workstation. *Proceedings of the 1985 Public Health Conference on Records and Statistics.* DHHS Pub. No. (PHS) 86-1214. Public Health Service. Washington. U.S. Government Printing Office, December 1985.
- Family Support Administration: The Medicaid Tape-to-Tape project. *Proceedings: 25th National Workshop on Welfare Research and Statistics.* SSA Pub. No. 80-8011. Office of Family Assistance, May 1986.
- IEEE Computer Society: The Medicaid Tape-to-Tape project: Empirical uses of a uniform data base. *Proceedings of the Ninth Annual Symposium on Computer Applications in Medical Care.* November 1985.
- Ray, W.A., Federspiel, C.F., Baugh, D.K., and Dodds, S.: Impact of growing numbers of the very old on Medicaid expenditures for nursing homes: A multistate, population-based analysis. *The American Journal of Public Health*, Vol. 77, No. 6, June 1987.
- Ray, W.A., Federspiel, C.F., Baugh, D.K., and Dodds, S.: Interstate variation in elderly Medicaid nursing home populations: Comparisons of resident characteristics and medical care utilization. *Medical Care*, Vol. 25, No. 8, August 1987.
- Ray, W.A., Griffin, M., Schaffner, W., Baugh, D.K., and Melton III, L.: Psychotropic drug use and the risk of hip fracture. *New England Journal of Medicine*, Vol. 316, No. 7, February 12, 1987.
- Burwell, B., Clauser, S., Hall, M.J., and Simon, J.: Medicaid recipients in intermediate care facilities for the mentally retarded. *Health Care Financing Review.* Vol. 8, No. 3. HCFA Pub. No. 03237. Health Care Financing Administration, Office of Research and Demonstrations. Washington. U.S. Government Printing Office, Spring 1987.
- Rymer, M.P., and Adler, G.: Children and Medicaid: The experience in four States. *Health Care Financing Review.* Vol. 9, No. 1. HCFA Pub. No. 03240. Health Care Financing Administration, Office of Research and Demonstrations. Washington. U.S. Government Printing Office, Fall 1987.
- Social Security Administration: *Report to Congress: Implementation and Analysis of Public Law 98-460—*

Section 1619 (The Social Security Disability Benefits Reform Act of 1984). Office of Programs and Policy, Office of Supplemental Security Income, July 1986.

- Andrews, R.M., Ruther, M., Baugh, D.K., Pine, P.L., and Rymer, M.P.: Medicaid expenditures for the disabled under a work incentive program. *Health Care Financing Review*. Vol. 9, No. 3. HCFA Pub. No. 03263. Health Care Financing Administration, Office of Research and Demonstrations. Washington. U.S. Government Printing Office. Spring 1988.
- Rymer, M.P., Dodds, S., Graver, L., and Sredl, K.: *Refugee Medical Assistance Study: Final Report*. U.S. Department of Health and Human Services, Office of Refugee Resettlement, October 1985.
- Howell, E.M., Rymer, M.P., Baugh, D.K., Ruther, M., and Buczko, W.: Medicaid Tape-to-Tape findings: California, New York and Michigan, 1981. *Health Care Financing Review*. Vol. 9, No. 4. HCFA Pub. No. 03265. Health Care Financing Administration, Office of Research and Demonstrations. Washington. U.S. Government Printing Office, Summer 1988.
- Howell, E.M., Baugh, D.K., and Pine, P.L.: Patterns of Medicaid utilization and expenditures in selected States: 1980-84. *Health Care Financing Review*. Vol. 10, No. 2. HCFA Pub. No. 03276. Health Care Financing Administration, Office of Research and Demonstrations. Washington. U.S. Government Printing Office, Winter 1988.
- Health Care Financing Administration: Use and Expenditure of Noninstitutionalized High-Cost Medicaid Recipients in Five States. Working Paper 89-1. Office of Research and Demonstrations, February 1989.
- Texas Department of Human Services: The Medicaid Tape-to-Tape project: A design for Medicaid research. *Proceedings: 26th National Workshop on Welfare Research and Statistics*. June 1987.
- Ray, W.A., Federspiel, C.F., Baugh, D.K., and Dodds, S.: Experience of a Medicaid nursing home cohort. *Health Care Financing Review*. Vol. 10, No. 4. HCFA Pub. No. 03284. Health Care Financing Administration, Office of Research and Demonstrations. Washington. U.S. Government Printing Office, Summer 1989.
- Howell, E.M., Andrews, R.M., and Gornick, M.: Longitudinal patterns of enrollment and expenditures for a Medicaid cohort. *Health Care Financing Review*. Vol. 10, No. 1. HCFA Pub. No. 03274. Health Care Financing Administration, Office of Research and Demonstrations. Washington. U.S. Government Printing Office, Fall 1988.

Medicaid Tape-to-Tape: Research Data and Analysis

Project No: 500-86-0016
Period: March 1986-October 1990
Funding: $ 5,141,406
Award: Contract
Contractor: SysteMetrics, Inc.
104 West Anapamu Street
Santa Barbara, Calif. 93101

Project Officers: Penelope L. Pine and David K. Baugh
Division of Program Studies

Description: This project continues the development and implementation of a Medicaid person-level data set from the five State Medicaid Management Information Systems (MMIS) in California, Georgia, Michigan, New York, and Tennessee. This effort will acquire data on enrollment, claims, and providers for 1985-88. These data will be used to create uniform files, provide descriptive reports, support analysis and evaluation, and develop methodology for online data base management. This project will provide a continuum of 9 years of uniform Medicaid data for the conduct of analysis of program management, evaluation of policy alternatives, and feedback to States in the area of Medicaid financing.

Status: Currently, project staff are acquiring and processing person-level enrollment, claims, and provider data that have been obtained from State MMIS. Project staff are also linking the data base to other kinds of health statistics to expand the uses of the data. The project will continue to produce early return tabulations that summarize enrollment, utilization, and expenditures data for each year and each participating State. Research is under way on a series of special topics including: capitation in Medicaid, spend down and its relationship to nursing home entry, the chronically mentally ill, hip fractures among the elderly, inpatient hospital use by Medicaid children, hospital reimbursement, Medicaid drug utilization, obstetrical services, physician volume, acquired immunodeficiency syndrome, and Medicaid providers. The following reports have been published:

- Andrews, R.M., Keyes, M.A., and Pine, P.L.: Acquired immunodeficiency syndrome in California's Medicaid program, 1981-84. *Health Care Financing Review*. Vol. 10, No. 1. HCFA Pub. No. 03274. Health Care Financing Administration, Office of Research and Demonstrations. Washington. U.S. Government Printing Office, Fall 1988.
- Adams, E.K., Ellwood, M.R., and Pine, P.L.: Utilization and expenditures under Medicaid for Supplemental Security Income disabled. *Health Care Financing Review*. Vol. 11, No. 1. HCFA Pub. No. 03286. Health Care Financing Administration, Office of Research and Demonstrations. Washington. U.S. Government Printing Office, Fall 1989.
- Howell, E.M., and Brown, G.A.: Prenatal, delivery, and infant care under Medicaid in three States. *Health Care Financing Review*. Vol. 10, No. 4. HCFA Pub. No. 03284. Health Care Financing Administration, Office of Research and Demonstrations. Washington. U.S. Government Printing Office, Summer 1989.

High-Volume and High-Payment Procedures in the Medicaid Population

Project No.: 500-86-0016
Period: December 1987-October 1988
Funding: $ 65,963
Award: Contract

Contractor: SysteMetrics/McGraw Hill
104 West Anapamu Street
Santa Barbara, Calif. 93101
Project Officer: Thomas W. Reilly
Division of Program Studies

Description: Section 9432(b) of the Omnibus Budget Reconciliation Act of 1986 (Public Law 99-509) mandated that the Department of Health and Human Services provide information to Congress relating to second surgical opinion and inpatient hospital preadmission review programs in Medicaid, especially focusing on identifying surgical procedures that are high in volume or cost. A report has been prepared that includes:

- Information such as payment rates, aggregate annual payments, and rates of performance for surgical procedures performed on the Medicaid population in a sample of States.
- Discussion of the extent to which second opinion programs may impede access to necessary care, and the measures States have taken to address such potential impediments.
- Information on surgical procedures that may be appropriate for a mandatory second surgical opinion program under Medicaid, considering factors about the procedures such as volume, cost, and nonconfirmation rates.

Project Hope and the RAND Corporation contributed significant parts of the project. Project Hope was funded by non-HCFA sources and RAND's contribution was funded as a task under the RAND Policy Research Center.

Status: The project is completed. The Report to Congress was released in June 1989. A summary of the report will appear in the Legislative Update section of the Winter 1989 issue of the *Health Care Financing Review*.

Background Papers for the Omnibus Budget Reconciliation Act of 1986 Report to Congress on High-Volume, High-Cost Procedures

Project No.: 99-C-98489/9-05
Period: May 1987-September 1988
Funding: $ 89,904
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center
(See page 77)
Task Leader: Thomas W. Reilly
Division of Program Studies

Description: The purpose of this project was for RAND to provide background and context for a congressionally mandated study identified in Section 9432(b) of the Omnibus Budget Reconciliation Act of 1986. This study involved the preparation of a report on second surgical opinion and preadmission review programs in Medicaid.

Status: The project has been completed. The Report to Congress was released in June 1989. In support of the effort, RAND completed two reports, "1987 Medicaid Preadmission Review Program" (WD-3820-HCFA), and "Second Surgical Opinion Programs: A Review of the Literature" (WD-3819-HCFA). RAND reported to the Health Care Financing Administration on high-volume, high-cost procedures in the Medicaid program and on variation in utilization of medical services by Medicaid recipients.

Medicare and Medicaid Program Statistics and Information

Funding: Intramural
Project Director: Charles R. Helbing
Division of Program Studies

Description: This project is designed to provide Medicare and Medicaid program statistics, information, and analyses to Federal agencies and public or private parties requesting health care data for the eligible populations. The data cover the entire range of program benefits and are of a type not readily available in publications or other sources. The data are used for:

- Preparing statistical and analytical health care reports.
- Monitoring the performance and efficiency of the Medicare and Medicaid programs.
- Evaluating the impact of new and proposed legislation and policy.
- Preparing special studies on the prospective payment system, catastrophic coverage, and other topics.

Status: During the first three quarters of 1989, approximately 150 requests for data were received. Many data requests with significant legislative/policy implications have been completed for Congress, the Health Care Financing Administration, other Federal agencies, universities, research firms, industrial associations, special interest groups, etc. Some of the requests have resulted in further research leading to the publication of *Research Briefs* and *Health Care Financing Review* articles.

Program Statistics Series Reports and Health Care Financing Research Briefs

Funding: Intramural
Project Director: Charles R. Helbing
Division of Program Studies

Description: These statistical reports, notes, and briefs describe, monitor, measure, and evaluate Medicare program benefits, initiatives, operations, and performance. The annual Medicare benefit reports are mandated by the Social Security Law. Other program reports, notes, and briefs are either mandated by Congress, as background for current legislative policy initiatives, or reflect prevailing health care issues. Beginning in 1987, the Medicaid program has become the subject of the same publications series.

Status: The following *Health Care Financing Notes* and *Research Briefs* have either been completed or have been sufficiently developed so that usable data are available on request:

- "Use and Cost of Medicaid Services, Fiscal Year 1984-85."
- "Use of Specialty Hospitals by Medicare Beneficiaries, 1985."
- "Medicare: Deductible and Coinsurance Amounts Incurred by Beneficiaries Discharged from Short-Stay Hospitals, 1983-84."
- "Use and Cost of Short-Stay Hospital Services Under Medicare as Related to Future Policy and Benefit Reform: Calendar Year 1985."
- "Use and Cost of Short-Stay Hospital Inpatient Services Under Medicare: Calendar Year 1985."
- "Use and Cost of Hospital Outpatient Services Under Medicare, 1985."
- "Medicare: Short-Stay Hospital Services, by Leading Diagnosis-Related Groups, 1983 and 1985."
- "Medicare: Surgical Procedures in Short-Stay Hospitals, by Census Region, 1983."
- "Medicare: Participating Providers and Suppliers of Health Services, December 1985."
- "Raising the Age of Eligibility for Medicare to Age 67."
- "Medicare: Use and Cost of Skilled Nursing Care Facilities, 1986."
- "Use and Cost of Short-Stay Hospital Inpatient Services Under Medicare, 1986."
- "Medicare: Use and Cost of Short-Stay Hospital Services by Beneficiaries with the Principal Diagnosis of Cataracts, 1984."
- "Medicare: Use of Home Health Services, 1985."
- "Medicare: Use and Cost of Short-Stay Hospital Services by Beneficiaries with the Principal Diagnosis of Diabetes, 1984."
- "Medicare: Use of Short-Stay Hospital Inpatient Services, by Principal Diagnosis, 1983-84."
- "Medicare: Use and Cost of Home Health Agency Services, 1983-84."
- "Medicare: Use and Charges for Inpatient Services in Short-Stay Hospitals, by Diagnosis-Related Groups, Calendar Years 1981 and 1984."
- "Use and Cost of Home Health Agency Services Under Medicare: Selected Calendar Years 1974-86."
- "Use and Cost of Home Health Agency Services Under Medicare, 1986."
- "Use and Cost of Physician and Supplier Services Under Medicare, 1986."
- "Medicare: Short-Stay Hospital Services, by Leading Diagnosis-Related Groups, 1984 and 1986."
- "Leading Inpatient Surgical Procedures for Aged Medicare Beneficiaries, 1987."
- "Use and Cost of Short-Stay Hospital Inpatient Services under Medicare, 1988."
- "Use and Cost of Skilled Nursing Facility Services under Medicare, 1987."
- "Medicare Participating Providers of Services, 1989."

Medicare and Medicaid Data Book

Funding: Intramural
Project Directors: Thomas W. Reilly, Herbert A. Silverman, Viola B. Latta, and Cheryl D. Black
Division of Program Studies

Description: This report provides descriptive statistics on the Medicare and Medicaid programs and provides a resource for public officials, researchers, policy analysts, and users and providers of health care. The report includes:

- A brief overview of the Medicare and Medicaid programs, and information on the relationships between the programs.
- Trends in the use and cost of Medicare and Medicaid benefits.
- Detailed information and statistics on the Medicare program, including eligibility, benefits, financing, and administration for both the hospital insurance and supplementary medical insurance programs.
- Detailed information and statistics on the Medicaid program, including eligibility criteria, recipient characteristics, benefit coverage, service use, expenditures, financing, and administration.
- Appendices that provide addresses of Medicare intermediaries and carriers, Medicaid State Agencies, medical assistance programs, and the offices in the Heath Care Financing Administration responsible for the various facets of the Medicare and Medicaid programs.

Status: *The Medicare and Medicaid Data Book, 1989* is expected to be available Fall 1990. Previous issues may be ordered from the Superintendent of Documents, U.S. Government Printing Office. The 1988 edition is stock number 017-060-00214-0, and the cost is $7.50 domestic; $9.36 foreign. The 1986 edition is stock number 017-060-00201-8, and the cost is $8 domestic; $10 foreign. The 1984 edition is stock number 017-070-00412-1, and the cost is $6.50 domestic; $8.13 foreign.

The Disease and Cost Impact of Influenza Epidemics on Medicare

Funding: Intramural
Project Director: Marshall McBean
Division of Beneficiary Studies

Description: Influenza epidemics occur almost every year and result in unnecessary disease, hospitalization, and costs to the Medicare population. The morbidity and costs in a nonepidemic year (1980-81) will be compared with the epidemic years of 1981-82, 1982-83, 1983-84, 1984-85, and 1985-86.

Status: Necessary data have been abstracted from the Health Care Financing Administration data files, and data analysis is taking place.

Patterns and Outcomes of Cancer Care in the Medicare Population

Funding: Intramural
Project Directors: James D. Lubitz and Gerald F. Riley
Division of Beneficiary Studies

Description: More than one-half of all cancer patients have Medicare coverage. This study focuses on

Medicare utilization of these patients from time of diagnosis through a data base linking Medicare data with cancer registry data collected through the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) program. The SEER program covers about 10 percent of the U.S. population. This data base contains anatomic site of the primary cancer, histology, stage of the disease at diagnosis, and date of diagnosis for each new case of cancer in the geographic areas covered by the program. The linkage of SEER and Medicare data will provide opportunities for research on issues of access to medical care, the costs of medical care obtained by cancer patients, and patterns of different types of medical care received by cancer patients diagnosed with different sites, stages, and histologies of cancer. Some specific questions to be addressed are:

- What are overall Medicare costs, by type of cancer, and within cancer type, by stage of disease?
- What comorbidities are associated with cancer and how do they influence Medicare use and cost?
- What is the mix of care, on a person basis, between community hospitals, teaching hospitals, and cancer centers?

Status: Linkage of SEER and Medicare data is under way. Preliminary results are expected in late 1990.

Trends and Patterns in Place of Death for Aged Medicare Enrollees

Funding: Intramural
Project Director: Alma B. McMillan
Division of Beneficiary Studies

Description: This study examines trends and patterns in place of death for aged Medicare enrollees from 1979 through 1986. The analysis focuses on changes in place of death during a pre-prospective payment system (PPS) period (1979 through 1983) and a post-PPS period (1983 through 1986). Changes as measured by percent distributions were analyzed for deaths in hospitals, nursing homes, and patients' homes. Patterns by age, marital status, and geographic location, and selected causes of death were also examined.

Status: Data from the *Vital Statistics of the United States*, produced by the National Center for Health Statistics, were analyzed to examine patterns and trends in place of death for persons 65 years of age or over from 1979 through 1986. Analyses indicate that there was a modest decline in deaths in the hospital inpatient setting after the implementation of PPS. However, an increase in at-home deaths and a large decline in hospital deaths for cancer patients suggest that hospice and other factors have shifted the place of death for cancer cases.

Hospitalization Rates and Mortality Study

Funding: Intramural
Project Director: Gerald F. Riley
Division of Beneficiary Studies

Description: Previous studies by other researchers have shown considerable variation among geographic areas in the rates at which selected procedures are performed on the Medicare elderly. This study provides hospitalization rates associated with 14 procedures commonly performed on the elderly for all U.S. metropolitan statistical areas and rural areas within States. The study also provides small-area rates of hospitalization for 26 diagnostic categories, including those defined in the hospital-specific mortality data release. Complementing the rates of hospitalization in the study are three types of mortality rates, all developed on the same small-area basis as the hospitalization data. The three types of mortality rates are: number of deaths within 30 days of admission per 1,000 hospital discharges; number of deaths within 30 days of admission per 1,000 Medicare enrollees; and total number of deaths per 1,000 Medicare enrollees. The last type of mortality rate applies to diagnostic categories, and not to procedures. The project is designed to:

- Obtain data on hospitalization from the 100-percent Medicare provider analysis and review file for 1986.
- Obtain data on total deaths by underlying cause for the aged population from the National Center for Health Statistics.
- Compute age and sex-adjusted small-area rates of hospitalization and mortality.
- Derive summary statistics and graphs, e.g., coefficients of variation, correlations, maps, and boxplots.

Status: An intramural work group developed specifications for the data release, and tables were generated by the Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration. The tables and accompanying text will be published in a two-volume set, expected to be released by Summer 1990. Volume 1 is entitled *Hospital Data by Geographic Area for Aged Medicare Beneficiaries: Selected Diagnostic Groups, 1986*, and Volume 2 is entitled *Hospital Data by Geographic Area for Aged Medicare Beneficiaries: Selected Procedures, 1986.*

Rehospitalization Study

Funding: Intramural
Project Director: Gerald F. Riley
Division of Beneficiary Studies

Description: In December of 1987, The Health Care Financing Administration (HCFA) released hospital-specific mortality data to the public. The purpose of this data release was to serve the public interest in quality of health care by providing information that hospitals, physicians, and consumers could use to help make decisions about selection of health care providers. HCFA is interested in developing additional information releases that will serve the same purpose. This study is designed to develop alternative outcomes (to mortality) for eight surgical procedures that could be useful in public releases as quality of care indicators. Primarily, this project is looking at the utility of rehospitalization

rates as quality of care indicators. This project is designed to:

- Develop outcome measures using the 100-percent Medicare provider analysis and review files. Rehospitalizations will be examined as well as adverse events occurring during the surgical stay.
- Convene panels of physicians to review data and make suggestions about identifying poor outcomes that could reflect quality of care problems.
- Develop rates of categories of adverse outcomes by demographic characteristics and by metropolitan statistical areas and rural areas within States.

Status: Three specialty panels of physicians were convened to identify adverse outcomes occurring during the initial stay or associated with a readmission. Rates of adverse outcomes were subsequently developed for the initial stay and for readmissions, and tables were generated by the Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration. The tables and accompanying text will be published as a report. *Rehospitalization by Geographic Area for Aged Medicare Beneficiaries: Selected Procedures, 1986-87* is expected to be released by Summer 1990.

International Comparative Data and Analyses of Health Care Financing and Delivery Systems

Project No.: 500-88-0009
Period: May 1988-May 1993
Funding: $ 201,044
Award: Contract
Contractor: The Organization for Economic Cooperation and Development
2, rue André-Pascal
75775 Paris CEDEX 16
France
Project Officer: C. McKeen Cowles
Division of Reimbursement and Economic Studies

Description: The Organization for Economic Cooperation and Development (OECD) originally consisted of the developed Western European nations plus the United States and Canada. OECD currently comprises 24 countries on four continents. The focus of this project is to develop, update, and refine an internationally comparable data base on health care spending patterns, prices, utilization, and delivery system characteristics in the OECD countries. The data developed under this contract will provide the basis for a series of analytical papers comparing international health systems and international variation in medical practice patterns (e.g., diagnostic-specific utilization of acute care inpatient facilities). The data are unique in that substantial efforts have been undertaken to make the data nearly compatible across countries. As a result, the data developed under this contract provide the best possible contemporary basis for performing cross-national comparisons of health systems.

Status: The contract has generated tabular data on expenditures, pricing, utilization, practice patterns, and general economic background information covering the period 1960 through 1987. More than a dozen papers on a variety of topics relating to international comparative health services research have been produced. The articles and data produced under this contract in its first year were published in the 1989 Annual Supplement of the *Health Care Financing Review*, entitled "International Comparison of Health Care Financing and Delivery: Data and Perspectives." Single copies are available from the Superintendent of Documents, U.S. Government Printing Office, stock number 717-011-00024-4. The cost is $6 domestic; $7.50 foreign.

Noncovered Services

Impact of Psychological Intervention on Health Care Utilization and Cost: A Prospective Study

Project No.: 11-C-98344/9-05
Period: September 1983-December 1988
Funding: $ 936,002
Award: Cooperative Agreement
Awardee: Hawaii State Department of Social Services and Housing
P.O. Box 339
Honolulu, Hawaii 96809
Project Officer: Bonnie M. Edington
Division of Health Systems and Special Studies

Description: The goal of this project is to determine whether short-term mental health treatment will reduce Medicaid utilization and costs on the island of Oahu, Hawaii. Medicaid eligibles who were in any of three high-risk groups were randomly assigned to experimental or control group status. The three groups are: persons 55 years of age or over; persons in the upper 15 percentile of health care utilizers; and persons with specific illnesses that have psychosomatic components. The experimental group receives: special outreach; short-term mental health treatment from psychologists, including individual, group, or family psychotherapy; biofeedback; and medication.

Status: All clinical services ended June 1987, and 1,449 Medicaid recipients had received the intervention. Data are being analyzed for evaluation of the project. The final report is expected in mid-1990.

Geriatric Continence Evaluation Contract

Project No.: 500-867-0028
Period: October 1987-December 1989
Funding: $ 125,000
Award: Technical Support: Evaluation of Demonstrations
(See page 80)

Contractor: Mathematica Policy Research Inc.
P.O. Box 2393
Princeton, N.J. 08543-2393
Project Officer: William D. Clark
Division of Long-Term Care Experimentation

Description: The contractor, through the subcontractor SysteMetrics, Inc., is evaluating the effectiveness of the Geriatric Continence Research Project as a means of determining the relative value of experimental approaches to geriatric incontinence compared with traditional methods of treatment and care for individuals with this distressing and difficult patient-care problem. The purpose of the evaluation is to determine the cost effectiveness of successful assessment and treatment methods being tested and to assess the applicability of the methods. Policy implications for the use of cost-effective assessment and treatments are to be presented in the context of current reimbursement criteria for incontinent patients.

Status: A final report has been received and is being reviewed.

Evaluation of the Alcoholism Service Demonstration

Project No.: 500-89-0066
Period: September 1989-June 1990
Funding: $ 149,949
Award: Contract
Contractor: MayaTech Corporation
1398 Lamberton Drive
Silver Spring, Md. 20902
Project Officer: Edward T. Hutton
Division of Health Systems and Special Studies

Description: Under this project, the contractor will produce a final report that addresses the effectiveness of the demonstration that expanded Medicare and/or Medicaid coverage to freestanding alcoholism treatment centers. The contractor will examine the impact of the demonstration on the use and cost of services. The project is supported by funds from the National Institute on Alcohol Abuse and Alcoholism, Public Health Service, and the Health Care Financing Administration.

Status: The project is in the early developmental stage. A final report is expected in mid-1990.

Small Business Innovation

QUEST: Quality Assurance Expert System Testbed

Project No.: 500-86-0032
Period: September 1986-July 1989
Funding: $ 143,669
Award: Contract
Contractor: Meridian Corporation
4300 King Street, Suite 400
Alexandria, Va. 22302-1508
Project Officer: Sydney P. Galloway
Office of Operations Support

Description: This project, authorized under the Small Business Innovation Development Act of 1982 (Public Law 97-219), built a prototype expert system, named QUEST—an acronym for quality assurance expert system testbed. This is a personal computer-resident, rule-based expert system to aid in the determination of deficient patient care in hospitals. It uses the definitions of nosocomial infections established by the Centers for Disease Control, Public Health Service. The system is set up in modules that allow for expansion to additional medical specialties and subspecialties at later stages. The system has two modes of operation. The first mode can be used for periodic reviews of all treatment procedures and identification of patterns of deficient care. The second mode is designed to act as a physician's aid in the administration of patient care.

Status: The project was completed in July 1989.

Development of Interactive Software to Assist in Providing Appropriate Care in Intensive Care Units

Project No.: 500-86-0031
Period: September 1986-July 1989
Funding: $ 150,935
Award: Contract
Contractor: L.M.P. Associates
3109 Rollin Road
Chevy Chase, Md. 20815
Project Officer: Sydney P. Galloway
Office of Operations Support

Description: This project, authorized under the Small Business Innovation Development Act of 1982 (Public Law 97-219), developed an interactive microcomputer-based system for intensive care units (ICUs). This system measures and monitors the quality and level of ICU care. It evaluates and documents the status of individual patients.

Status: The project was completed in July 1989.

Diagnosis-Related-Group-Specific Resource Management Software for Hospitals

Project No.: 500-88-0036
Period: June 1988-December 1990
Funding: $ 117,592
Award: Contract
Contractor: John Rafferty and Associates
6408 West College Drive
Phoenix, Ariz. 85033
Project Officer: Sydney P. Galloway
Office of Operations Support

Description: This project is authorized under the Small Business Innovation Development Act of 1982 (Public Law 97-219). The objective is to develop a software package for predicting and evaluating hospital resource use and needs on a diagnosis-related-group basis.

Status: This project has completed the design phase, and the software package is in development.

Medicaid Capitation Management Information System Technical Assistance Guide

Project No.: 500-87-0022
Period: June 1987-August 1989
Funding: $ 110,734
Award: Contract
Contractor: Birch and Davis Associates, Inc.
8905 Fairview Road, Suite 300
Silver Spring, Md. 20910
Project Officer: Sydney P. Galloway
Office of Operations Support

Description: This project, authorized under the Small Business Innovation Development Act of 1982 (Public Law 97-219), developed a technical guide to assist automated data processing managers in State Medicaid programs to monitor prepaid providers. Phase I resulted in a detailed outline of the guide, site visits to Medicaid programs, and the use of an expert panel for topic suggestions and product review. Phase II consisted of the actual preparation of the manual.

Status: The project was completed in August 1989.

Automated Monitoring for Health Maintenance Organization Quality Assessment

Project No.: 500-87-0023
Period: June 1987-June 1990
Funding: $ 124,054
Award: Contract
Contractor: Schaller Associates, Inc.
3200 North Central Avenue, Suite 680
Phoenix, Ariz. 85012
Project Officer: Sydney P. Galloway
Office of Operations Support

Description: This project is authorized under the Small Business Innovation Development Act of 1982 (Public Law 97-219). The objective of the project is to implement an effective, automated quality monitoring program for health maintenance organization (HMO) administrators. Phase I produced a field-tested plan describing the minimum set of data elements required, their specific sources, and the relevant instruments, procedures, and resulting reports. Phase II is under way and involves the development of computer software and documentation. The contractor will include a hands-on implementation at selected HMO test sites for test purposes.

Status: Phase I of the project has been completed. Phase II is under way and will be completed in June 1990.

Automated Monitoring for Nursing Home Quality Assessment

Project No.: 500-88-0041
Period: June 1988-December 1991
Funding: $ 121,105
Award: Contract
Contractor: Schaller Associates, Inc.
3200 North Central Avenue, Suite 680
Phoenix, Ariz. 85012
Project Officer: Sydney P. Galloway
Office of Operations Support

Description: This project is authorized under the Small Business Innovation Development Act of 1982 (Public Law 97-219). The objective of the project is to develop an automated quality of care monitoring program for nursing home administrators. The program will generate reports on profiles of care and note exceptions to norms. It will be usable by nursing and support staff and will be portable to multiple sites.

Status: This project is in the product development stage.

Acquired Immunodeficiency Syndrome Comprehensive Monitoring System Pilot Project

Project No.: 500-88-0040
Period: June 1988-June 1991
Funding: $ 125, 846
Award: Contract
Contractor: Research Consultants
1236 South Masselin Avenue
Los Angeles, Calif. 90019
Project Officer: Sydney P. Galloway
Office of Operations Support

Description: This project is authorized under the Small Business Innovation Development Act of 1982 (Public Law 97-219). There are four objectives in this project:

- To identify the service components and the source of payment for acquired immunodeficiency syndrome (AIDS) and AIDS-related complex patients who receive care in alternative settings (apart from traditional institutional settings).
- To identify the services that are requested, but are not available, in alternative care programs.
- To develop standard protocols for collecting units of service use and cost data in AIDS alternative care settings.
- To develop a microcomputer-based system for monitoring and managing costs for AIDS patients in alternative settings.

Status: This project is in the product development stage.

Development of an Acquired Immunodeficiency Syndrome Medicaid Monitoring System

Project No.: 500-89-0027
Period: June 1989-February 1990
Funding: $ 34,069 (Phase I)
Award: Contract
Contractor: Laguna Research Associates
1803 Laguna Street
San Francisco, Calif. 94115
Project Officer: Sydney P. Galloway
Office of Operations Support

Description: This project will test the overall feasibility of designing a system to monitor and analyze Medicaid program data on acquired immunodeficiency syndrome (AIDS) resource use and cost. AIDS Medicaid service use can be identified in programmatic files through diagnostic codes or other means and the parts pulled together.

Status: The basic design phase has been completed.

A Microcomputer-Based Information System to Monitor Social and Subacute Services for Persons with Acquired Immunodeficiency Syndrome

Project No.: 500-89-0029
Period: June 1989-February 1990
Funding: $ 24,998 (Phase I)
Award: Contract
Contractor: Berkeley Planning Associates
440 Grand Avenue, Suite 500
Berkeley, Calif. 94610-5085
Project Officer: Sydney P. Galloway
Office of Operations Support

Description: This project will evaluate the feasibility of developing a basic microcomputer-based information system for local agencies to monitor client-specific community-based social and subacute care services and costs for persons with acquired immunodeficiency syndrome (AIDS). The system will include caregiving, volunteer services, formal social service utilization, and costs incurred for AIDS patients. Information will be linked to medical care data through encryption and match programs.

Status: The basic design phase has been completed.

Utilization Management Techniques for Physicians' Services and Non-Physician Ambulatory Services

Project No.: 500-89-0030
Period: June 1989-February 1990
Funding: $ 24,851 (Phase I)
Award: Contract
Contractor: Center for Health Policy Studies
6310 Steven's Forest Road, Suite 100
Columbia, Md. 21046
Project Officer: Sydney P. Galloway
Office of Operations Support

Description: This is a project to prepare a practical guidebook that identifies and assesses the performance of private sector programs to monitor and reduce excess utilization of physician and ambulatory services. The focus will be on programs that are particularly suited to Medicare and its utilization experience. The guidebook will be in the form of a best practices guide focusing on programs that have demonstrated a capacity to reduce utilization.

Status: The basic design phase has been completed.

Development of New Automatic Interactions Detection Software

Project No.: 500-89-0031
Period: June 1989-December 1989
Funding: $ 25,839 (Phase I)
Award: Contract
Contractor: Austin Data Management Associates
P.O. Box 4358
Austin, Tex. 78765
Project Officer: Sydney P. Galloway
Office of Operations Support

Description: This project will develop a new computer software package to perform automatic interactions detection (AID). AID was used in the development of the Medicare hospital payment system based on diagnosis-related groups. AID is also being used in the development of case-mix classification systems. The proposed product will incorporate statistical methods that were developed in the last 10 years and will vastly improve the ability of a user (who is not a programmer) to operate AID. The major improvement is the shift of the AID capability from a mainframe computer to a personal computer format—a move which itself will cause a dramatic improvement in the usability of the AID package.

Status: The basic design phase has been completed.

An Efficient, Effective Automated Care Plan Tool

Project No.: 500-89-0032
Period: June 1989-December 1989
Funding: $ 35,000 (Phase I)
Award: Contract
Contractor: HealthLink Systems, Inc.
103 East Washington Street
Syracuse, New York 13202
Project Officer: Sydney P. Galloway
Office of Operations Support

Description: This project will develop a microcomputer-based model which generates a nursing plan of care directly from the patient's responses to illness. The entry of subsequent nursing assessments for the patient will evaluate the effectiveness of nursing interventions. This project requires the development of measurable, objective criteria for the quality and level of delivered nursing care.

Status: The basic design phase has been completed.

Development of a Tool for Assessing Hospital Bed Needs in Rural Communities

Project No.: 500-89-0028
Period: June 1989-February 1990
Funding: $ 34,289 (Phase I)
Award: Contract
Contractor: Laguna Research Associates
1803 Laguna Street
San Francisco, Calif. 94115

Project Officer: Sydney P. Galloway
Office of Operations Support

Description: This project will develop an empirical model of hospital utilization that can be used by rural communities to assess bed needs in a community, and thereby to assist in their long-range planning. The model will relate hospital utilization to the socioeconomic and demographic characteristics of the population, the availability of substitute services, and other factors felt to impact on demand and supply of services. The project will also develop an empirical model of rural hospital costs per patient day. This model will incorporate fluctuations in occupancy rates and volume of selected services on the cost per day of care.

Status: The basic design phase has been completed.

A Planning Process for Changing Rural Health Care Delivery Systems

Project No.: 500-89-0033
Period: June 1989-December 1989
Funding: $ 37,359 (Phase I)
Award: Contract
Contractor: Public Health Resource Group
P.O. Box 5068, Station A
Portland, Maine 04101
Project Officer: Sydney P. Galloway
Office of Operations Support

Description: This project will develop a written set of planning protocols, statistical algorithms, and computer software to assist rural hospitals and their communities in evaluating the efficacy and financial condition of the hospital(s) and health care delivery system as they plan for change.

Status: The basic design phase has been completed.

Research Centers and Evaluation Support

The RAND/University of California, Los Angeles/ Harvard Health Care Financing Policy Research Center

Project No.: 99-C-98489/9-06
Period: March 1984-July 1994
Funding: $ 10,780,506 (Total funds awarded for projects from March 1984 through September 1989)
Award: Cooperative Agreement
Awardee: The RAND Corporation
1700 Main Street
Santa Monica, Calif. 90406
Project Officer: Michael J. Baier
Office of Operations Support

Description: The primary responsibility of the RAND/University of California, Los Angeles (UCLA)/Harvard Health Care Financing Policy Research Center is to provide expert consultation in planning, implementing, and evaluating research and demonstrations studies related to the ongoing functioning of the Medicare and Medicaid programs. The RAND Corporation is the principal partner organization for the Research Center. The UCLA School of Public Health, the Division of Health Policy Research and Education at Harvard University, and the Consolidated Consulting Group have affiliated with RAND as subcontractor organizations under this cooperative agreement. The Center has provided support and expertise on priority initiatives in all major areas of program activity.

Status: Each year under the cooperative agreement, the RAND/UCLA/Harvard Research Center and the Health Care Financing Administration (HCFA) jointly develop an agenda of specific topics and projects to conduct. The Center is currently in its sixth year of operation. In November 1987, as a result of a special research center solicitation, HCFA extended RAND's expiration date of this cooperative agreement for 5 additional years to July 31, 1994. All of the currently awarded projects are described in the appropriate sections of this *Status Report*. The following is a list of the project titles:

Quality of Care

- Interpreting Hospital Mortality Data: How Much Can Patient Severity and Quality of Care Explain?
- Evaluating Quality of Care for Surgical Patients: Using the Diagnosis-Related Group/Quality of Care Data for Research on Hip Patients.

Physician and Ambulatory Care Payment Systems

- Specialty Differentials Across Localities.
- Multiple Hospital Visits.
- Assistants at Surgery.
- Medical Visit Coding.
- Concurrent Care During Surgical Admissions.
- Physician Practice Patterns.
- Medicare Physician Experience Differentials.
- Global Fees.

Capitated Payment Systems

- Capitation and Physiologic Measures of Health.
- Medicare Insured Group Ratesetting.
- Evaluation of the Prepaid Managed Health Care Demonstration.
- Beneficiary Incentives to Choose Alternative Health Plans.

Hospital Payment

- Administratively Necessary Days.
- Indirect Medical Education Under the Prospective Payment System.
- Alternative Recalibration Methods Under the Prospective Payment System.
- Simulations of Alternative Prospective Payment System Outlier Payment Options.
- Interactions Between Outlier Payment Policy and Methods of Diagnosis-Related-Group Recalibration and Classification.
- Diagnosis-Related Group Outlier Payment Effect on Quality of Care.
- Review of New Jersey's Prospective Payment System.
- Determinants of Hospital Costs and Their Growth.
- Analysis of Case-Mix Growth Among Hospitals.

- Measuring Components of Case-Mix Change.
- Health Care for Poor and Rural Hospital Patients.

Program Efficiencies, Analyses, and Refinements

- Durable Medical Equipment.
- Background Papers for the Omnibus Budget Reconciliation Act of 1986 Report to Congress on High-Volume, High-Cost Procedures.

Subacute and Long-Term Care

- Cost of Acquired Immunodeficiency Syndrome.
- Medicaid Home and Community-Based Waiver Programs for Acquired Immunodeficiency Syndrome Patients.
- The Effects of the Human Immunodeficiency Virus Epidemic on the Uses of Medicaid by Women and Children.
- Mental Health Studies.
- Evaluation of Massachusetts Case-Managed Medical Care for Nursing Home Patients.
- Changes in the Post-Hospital Care Utilization Among Medicare Patients.

Brandeis University Health Policy Research Consortium

Project No.: 99-C-89526/1-06
Period: March 1984-July 1994
Funding: $ 7,875,920 (Total funds awarded for projects from March 1984 through September 1989)
Award: Cooperative Agreement
Awardee: Brandeis University Heller Graduate School
415 South Street
Waltham, Mass. 02254
Project Officer: Michael J. Baier
Office of Operations Support

Description: The Brandeis University Health Policy Research Consortium (HPRC) includes the Boston University School of Medicine; the Center for Health Economics Research, Needham, Mass.; and The Urban Institute Health Policy Center, Washington, D.C. These institutions provide expertise in the areas of health services delivery issues, physician payment alternatives, and long-term care policy options, as well as microsimulation and data processing capabilities.

Status: Each year under the cooperative agreement, the Brandeis HPRC and the Health Care Financing Administration (HCFA) jointly develop an agenda of specific topics and projects to conduct. The Center is currently in its sixth year of operation. In November 1987, as a result of a special research center solicitation, HCFA extended Brandeis' expiration date of this cooperative agreement for 5 additional years to July 31, 1994. All of the currently awarded projects are described in the appropriate sections of this *Status Report*. The following is a list of the project titles:

Quality of Care

- Using Case-Mix Systems to Measure Quality of Care.
- Evaluating Quality of Care for Hospitalized Patients.
- Development of Ambulatory Surgery Quality of Care Measures and Monitoring Strategy.

Physician and Ambulatory Care Payment Systems

- Concurrent Care During Surgery.
- Global Fees for Surgery.
- Geographic Variation in Inpatient Physician Consultation Rates.
- Urban and Rural Differences in Physician Practices.
- Urban and Rural Manpower Shortage Areas.
- Diagnostic Test Interpretation and Medical Visit Billing.
- Medicare Payments for Anesthesia Services.
- Analysis of Variations in Anesthesia Payments.
- Comparison of Medicare Fees to Private Payers.
- Individual Practice Association Physician Relationships.
- Physician Income Over Time.
- Bundling Physicians' Services in Hospital Outpatient Departments.

Capitated Payment Systems

- Geographic Variation and Long-Run Capitation Ratesetting for Medicare Expenditures.
- Examination of Alternatives to the Adjusted Average Per Capita Cost Geographic Factor.
- Continuous Update Diagnostic Cost Group Model.
- Clinical Refinement of Diagnostic Cost Group Model.
- A Time-Dependent Diagnostic Cost Group Reimbursement Model for Medicare Health Maintenance Organization Enrollees.
- Impacts of the Working Aged on Medicare Expenditure Rates.
- Study of the Health Maintenance Organizations That Have Not Renewed Their Tax Equity and Fiscal Responsibility Act Risk Contracts.

Hospital Payment

- Administratively Necessary Days.
- Uncompensated Care Tables: 1984 American Hospital Association and Urban Institute Survey.
- Hospital Occupancy Rates: Impact on Capital Expenditures.
- Hospital Capital Construction Cost Index.
- Analysis of the Tax Equity and Fiscal Responsibility Act for Reimbursement of Excluded Hospitals Under the Prospective Payment System.

Program Efficiencies, Analyses, and Refinements

- Estimating Cost of Training for Self-Dialysis.
- Study to Evaluate the Use of Mail Service Pharmacies.
- Dispensing Physicians as Participating Pharmacists.
- Medicare Financing Simulation Model.

Subacute and Long-Term Care

- Capitation Reimbursement for Frail Elderly.
- Feasibility Analysis for Pathways to Long-Term Care Project.
- Activities of Daily Living Measurements as Determinants of Eligibility.
- Urban/Rural Variation in Home Health Agency and Nursing Home Services.
- Cohort Analysis of Disabled Elderly.

- Study of Alternative Out-of-Home Services for Respite Care.
- Financial Impact to Beneficiaries of Nursing Home Care.

Project Hope Health Policy Research Center

Project No.: 99-C-99168/3-02
Period: January 1988-July 1991
Funding: $ 1,672,315 (Total funds awarded for projects from January 1988 through September 1989)
Award: Cooperative Agreement
Awardee: The People-To-People Health Foundation, Inc.
Two Wisconsin Circle, Suite 500
Chevy Chase, Md 20815
Project Officer: Michael J. Baier
Office of Operations Support

Description: On November 19, 1987, Project Hope's (Health Opportunity for People Everywhere) application as a research center for the Health Care Financing Administration was approved for the first-year period, January 1, 1988, through December 31, 1988. This period was subsequently extended through July 31, 1989. A second project period, i.e., the period from August 1, 1989, through July 31, 1990, has also been approved. Overall, the cooperative agreement is planned to be in effect through July 31, 1991. This agreement is contingent on the availability of future-year funds, as well as the overall progress of the Center in meeting study objectives. To assist in this effort, the Vanderbilt University Health Policy Center, Medical College of Virginia Williamson Institute, and Social and Scientific Systems, Inc., are the three major subcontractors to Project Hope.

Status: All of the projects Project Hope was conducting between October 1988 and September 1989 are described in the appropriate sections of this *Status Report*. The following is a list of the project titles:

Quality of Care

- Option Paper on Collection of Health Status Information on Consecutive Cohorts of Medicare Beneficiaries.

Physician and Ambulatory Care Payment Systems

- Billing Patterns for Critical-Care Physician Services.
- Medicare Participating Heart Bypass Center Demonstration Design.
- Physician Payment Differentials by Board Certification Status.
- Review of Private Sector's Payment Methodologies for Hospital Outpatient Services.

Capitated Payment Systems

- Working Aged Beneficiaries: Program Impacts and Implications for the Adjusted Average Per Capita Cost.
- Capitated Community Nursing Organizations.

Hospital Payment

- Hospital Transfer and Referral Patterns.
- Interaction Between Medicare Payments and Nursing Shortages.

Program Efficiencies, Analyses, and Refinements

- Providing Technical Assistance to the Advisory Council on Social Security.
- Pricing and Coverage Decisions for New and Existing Technologies.
- An Analysis of Medicare Expenditures for Ambulance Services.

University of Minnesota Research Center

Project No.: 99-C-99169/5-02
Period: January 1988-July 1991
Funding: $ 1,920,055 (Total funds awarded for projects from January 1988 through September 1989)
Award: Cooperative Agreement
Awardee: University of Minnesota
1919 University Avenue
St. Paul, Minn. 55104
Project Officer: Michael J. Baier
Office of Operations Support

Description: On November 19, 1987, the University of Minnesota's application as a research center for the Health Care Financing Administration was approved for the first-year period, January 1, 1988, through December 31, 1988. This period was subsequently extended through July 31, 1989. A second project period, i.e., the period from August 1, 1989, through July 31, 1990, has also been approved. Overall, the cooperative agreement is expected to be in effect through July 31, 1991. This agreement is contingent on the availability of future-year funds and the overall progress of the Center in meeting study objectives. To assist in this effort, the University of Pennsylvania and Mathematica Policy Research, Inc., are two major subcontractors affiliated with the University of Minnesota.

Status: All of the projects the University of Minnesota was conducting between October 1988 and September 1989 are described in the appropriate sections of this *Status Report*. The following is a list of the project titles:

Quality of Care

- Outcome Measures for Assessment of Hospital Care.
- Psychoactive Drug Use Among Nursing Home Elderly.

Physician and Ambulatory Care Payment Systems

- Volume and Intensity of Physician Services.
- Effectiveness of Medicare Carrier Volume and Intensity Controls.
- Diagnostic Tests: Technical Components.
- Diagnostic Tests, the Technical Component: Provider Volume and Ownership Patterns.

- Economies in Furnishing Physician Services.
- Physician Preferred Provider Organization Demonstration.
- Determinants of Cost of Care: The Influence of Physician Style Versus Patient Characteristics.
- Laboratory Industry Technology and Productivity Changes.

Capitated Payment Systems

- Technical Advisory Panel: Health Maintenance Organization Research-Setting Agenda for Understanding the Industry.
- Alternatives to Fee-For-Service as a Base for Health Maintenance Organization Premium Setting.

Hospital Payment

- Medicare Hospital Payment Policies: Impact on the Nursing Shortage.
- Review of Montana Medical Assistance Facility Demonstration Project.
- Medical Assistance Facility Certification Criteria.

Program Efficiencies, Analyses, and Refinements

- An Assessment of Private Sector Prescription Drug Utilization Review Programs.
- Study of Inappropriate Use of Medications by Medicare Beneficiaries.

Subacute and Long-Term Care

- Program for All-inclusive Care for the Elderly (On Lok) Case Study.
- Analysis of Costs, Patient Characteristics, Access, and Service Use in Urban/Rural Home Health Agencies.
- Report on Costs of Case Management.
- Goals and Strategies for Financing Long-Term Care.

Technical Support: Evaluation of Demonstrations

Project Nos.: 500-87-0028; 500-87-0029; 500-87-0030
Period: June 1987-June 1991
Funding: $ 6,150,000
Award: Contracts
Contractors: Mathematica Policy Research
Box 2393
Princeton, N.J. 08543

Lewin/ICF
1090 Vermont Avenue, NW., Suite 700
Washington, D.C. 20005

Abt Associates, Inc.
55 Wheeler Street
Cambridge, Mass. 02138
Project Officer: Tony F. Hausner
Division of Long-Term Care Experimentation

Description: The Health Care Financing Administration (HCFA) has awarded indefinite quantity contracts to Mathematica Policy Research, Lewin/ICF, and Abt Associates. These contracts are designed to assist in evaluating demonstrations through the use of small-scale tasks that can be awarded within short timeframes. The three firms will compete for each task.

Status: All of the currently awarded projects are described in the appropriate sections of this *Status Report*. The following is a list of project titles:

Physician and Ambulatory Care Payment Systems

- Evaluation of the Physician Preferred Provider Organization Demonstration.
- Medicare Cataract Surgery Alternate Payment Demonstration.
- Medicare Participating Heart Bypass Center Demonstration.
- Evaluation of New York State Products of Ambulatory Care Demonstration Project.

Capitated Payment Systems

- Evaluation of Diagnostic Cost Group Pilot Demonstration.
- Evaluation of HealthChoice, Inc.—Independent Broker.
- Evaluation of the Florida Alternative Health Plans Project.
- Evaluation of the Office of Public Affairs Marketing Campaign.

Hospital Payment

- Rural Secondary Specialty Center Demonstration Evaluation.
- Rural Health Transition Grant Evaluation.
- Evaluation of Ventilator-Dependent Unit Demonstration.

Program Efficiencies, Analyses, and Refinements

- Geriatric Continence Evaluation Contract.
- Evaluation of Medicare Case Management Demonstrations.

Health Care Prevention and Access

- Cross-Cutting Evaluation of Medicare Prevention Demonstrations.
- Study of Medicare Coverage of Influenza Vaccine Demonstration and Evaluation.
- Evaluation of the Omnibus Budget Reconciliation Act of 1987 Medicare Payment for Therapeutic Shoes for Individuals with Severe Diabetic Foot Disease Demonstration.
- Evaluation of Beneficiary Counseling Demonstration.

Subacute and Long-Term Care

- Evaluation Design for Medicare Alzheimer's Disease Demonstration.
- Prior and Concurrent Authorization Demonstrations.

Catastrophic Coverage Studies

Study to Evaluate the Use of Mail Service Pharmacies

Project No.: 99-C-98526/1-05
Period: September 1988-July 1989
Funding: $ 238,152
Award: Cooperative Agreement

Awardee: Brandeis University Research Center (See page 78)
Task Leader: William L. England, Division of Health Systems and Special Studies

Description: This study was mandated by Congress in Section 202(k)(1)(B) of the Medicare Catastrophic Coverage Act of 1988 (Public Law 100-360). The Report to Congress that resulted from the study describes the mail service pharmacy industry, based on data from the literature and from a mail questionnaire and followup visits to a sample of mail service pharmacies.

Status: This study has been completed. The following conclusions are drawn from the Report:

- For mail service pharmacies responding to the survey (estimated to represent more than 75 percent of the industry), reported averages were: $42.32 charge per prescription; 2.2 prescriptions per order processed; 76.7 days supply per prescription; or $.561 charge per day supply. Comparison averages taken from the literature for community pharmacies were: $15.19 per prescription, 26 days supply per prescription, or $.584 charge per day supply. The longer average fill length and charge per prescription for mail pharmacies reflects the predominance of 90-day maintenance drug fills in their orders.
- Most mail service pharmacy customers are part of group contracts with employers or insurers. The reimbursement formula in such contracts is negotiated, with most specifying the formula as average wholesale price (AWP), less a percentage discount, plus a dispensing fee. Such a formula suggests that drug acquisition costs for many mail service pharmacies are well below AWP. However, the amount of such discounts could not be determined in this study because participation in the study was voluntary and most firms were unwilling to provide detailed financial data.

The final report, "Study to Evaluate the Use of Mail Service Pharmacies," was received in September 1989 and should be available from the National Technical Information Service by mid-1990.

The Utilization of Pharmaceuticals by the Elderly Receiving Drug Benefits Under State-Sponsored Programs

Project No.: 18-C-99191/4-01
Period: September 1988-December 1989
Funding: $ 91,315
Award: Cooperative Agreement
Awardee: University of South Carolina, College of Pharmacy, Columbia, S.C. 29208
Project Officer: C. McKeen Cowles, Division of Reimbursement and Economic Studies

Description: This project will be used to analyze drug utilization, charges, and expenditures of Pennsylvania's elderly who are participating in the Pennsylvania Medicaid program as well as those who are enrolled in the Pharmaceutical Assistance Contract for the Elderly (PACE), two mutually exclusive programs. Using 1987-88 drug claim data from the two programs, researchers will:

- Determine what percentage of the elderly population will reach a predefined deductible.
- Examine prescription use and expenditures once the deductible is met.
- Study the demographic relationships of the elderly population on prescription utilization and expenditures.
- Estimate the elderly's prescription usage and expenditures by therapeutic categories.

Status: The final report is expected in mid-1990.

Drug Utilization and Expenditures for Pennsylvania Pharmaceutical Assistance Contract for the Elderly Program Beneficiaries: Longitudinal Cohort Analyses

Project No.: HCFA-88-1112
Period: August 1988-March 1989
Funding: $ 25,000
Award: Contract
Contractor: Gerontology Center, College of Health and Human Development, The Pennsylvania State University, 210 Henderson Building, South University Park, Pa. 16802
Project Officer: Feather Ann Davis, Division of Reimbursement and Economic Studies

Description: The purpose of the contract is to conduct longitudinal analyses of prescription drug utilization and expenditures for beneficiary cohorts based on enrollment data in the Pennsylvania Office of Aging drug benefit program, the Pharmaceutical Assistance Contract for the Elderly (PACE). The contract examined changes in drug utilization for age groups within three cohorts: the initially enrolled 1984 cohort, the voluntarily enrolled 1985 cohort, and the voluntarily enrolled 1986 cohort. To ensure comparability of coverage, only those persons who enrolled in 1 year and then reenrolled in the following year are included. The descriptive analyses consist of several measures of drug utilization, including number of prescriptions per year, total daily doses by type of drug, total expenditures, and expenditures by types of drugs for the cohorts and for age groups within cohorts. Measures are calculated per enrollee per month of eligibility as well as per prescription user per month of eligibility.

Status: The final report, "Drug Utilization and Expenditures for Elderly Pennsylvania PACE Program Beneficiaries: Longitudinal Cohort Analyses," is

available from the National Technical Information Service, accession number PB90-141326.

An Analysis of the Impact of Prescription Drug Coverage for Aged Medicare Beneficiaries

Project No.: 17-C-99392/3-01
Period: August 1989-August 1992
Funding: $ 889,741
Award: Cooperative Agreement
Awardee: Gerontology Center
College of Health and
Human Development
The Pennsylvania State University
210 Henderson Building South
University Park, Pa. 16802
Project Officer: Feather Ann Davis
Division of Reimbursement and
Economic Studies

Description: The purpose of the cooperative agreement is to conduct four coordinated studies of prescription drug use among the elderly, using the data base from the Pennsylvania Department on Aging's Pharmaceutical Assistance Contract for the Elderly (PACE) data base. These studies include: longitudinal studies of PACE cohorts, study of demand characteristics of established insureds, study of prescription drug use in the last year of life, and drug-risk analysis.

Status: A request is being prepared for Medicare Part A and Part B data for linkage with the PACE data base. Programming for the cohort analyses is complete.

Analyses of Patterns of Prescription and Over-the-Counter Drug Use Among the Elderly: Collaborative and Site-Specific Descriptive and Multivariate Analyses of Data Collected by the Established Populations for Epidemiologic Studies of the Elderly Contracts

Project No.: 1 Y03 AG-9-0130-01
Period: June 1989-June 1990
Funding: $ 300,000
Award: Interagency Transfer
Awardee: National Institutes of Health
National Institute on Aging
Bethesda, Md. 20892
Project Officer: Feather Ann Davis
Division of Reimbursement and
Economic Studies

Description: This project will supplement the National Institute on Aging's analysis of prescription drug and over-the-counter drug data that have been collected by the four contracts that comprise the Established Populations for Epidemiologic Studies of the Elderly (EPESE).

Status: Proposals from the four EPESE contractors have been received and are under review.

Dispensing Physicians as Participating Pharmacists

Project No.: 99-C-98526/1-06
Period: August 1989-July 1990
Funding: $ 104,727
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: Feather Ann Davis
Division of Reimbursement and
Economic Studies

Description: The purpose of this project is to examine the role of physicians in the dispensing of prescription drugs in the United States, with a particular emphasis on the elderly population. Physician dispensing will be explored by focusing the analysis on the drug repackaging industry that provides drug products and related services to most physicians who engage in dispensing.

Status: The project is in the early developmental stage.

An Assessment of Private Sector Prescription Drug Utilization Review Programs

Project No.: 99-C-99169/5-02
Period: September 1989-September 1990
Funding: $ 100,726
Award: Cooperative Agreement
Awardee: University of Minnesota Research Center
(See page 79)
Task Leader: William L. England
Division of Health Systems and
Special Studies

Description: The purpose of this study is to identify and classify alternate approaches to drug utilization review (DUR) in private-sector health insurance plans (including health maintenance organizations), to evaluate the effectiveness of these programs, and to make recommendations regarding approaches or combinations of approaches that should be tested by the Health Care Financing Administration through demonstration projects. This project will evaluate the outcomes, process, and structure of existing DUR programs, seeking to identify and describe innovative, cost-effective, and replicable approaches to DUR that apply to the elderly. The outcomes of interest include: maximization of benefit from drug therapy, minimization of risk from drug incompatibilities or inappropriate use of drugs, and minimization of cost of drug therapy regimes.

Status: This project is in the early development phase.

Model for Developing Methodological Strategies for Outpatient Drug Use Review Under the Medicare Catastrophic Coverage Act of 1988

Project No.: 17-C-99406/3-01
Period: August 1989-August 1991

Funding: $ 411,000
Award: Cooperative Agreement
Awardee: Center on Drugs and Public Policy
Graduate School, Baltimore
The University of Maryland
20 North Pine Street
Baltimore, Md. 21201
Project Officer: Feather Ann Davis
Division of Reimbursement and Economic Studies

Description: The purpose of the cooperative agreement is to design a model for the development of explicit systematic methodological strategies to conduct outpatient drug use reviews. Five panels of experts will be convened for the specification of drug use review criteria.

Status: The advisory group has had an initial meeting and has identified the following categories for further work by the five expert panels: H_2 blockers, benzodiazapines, nonsteroidal anti-inflammatory drugs, antidepressants and antipsychotics, and digoxin/ace inhibitors/calcium channel blockers.

Research Issues in the Medicare Outpatient Prescription Drug Program

Project No.: HCFA-88-1113
Period: August 1988-December 1989
Funding: $ 24,526
Award: Contract
Contractor: Center on Drugs and Public Policy
Graduate School, Baltimore
The University of Maryland
20 North Pine Street
Baltimore, Md. 21201
Project Officer: Feather Ann Davis
Division of Reimbursement and Economic Studies

Description: The purpose of the contract is to identify the major issues that need to be researched in the areas of: prescription drug utilization and pharmacoepidemiology; prescription drug expenditures, pricing, and financing issues; and therapeutic drug use review.

Status: Draft reports have been submitted that summarize relevant literature reviews, present the recommended major research priorities, and specify data elements necessary for analyses. Table shells for routine reports have been specified. The draft final report that presents all three major topics was received December 1989.

Impact of Home Intravenous Drug Benefits on Beneficiary Utilization of Services

Project No.: 17-C-99457/4-01
Period: August 1989-February 1991
Funding: $ 300,000
Award: Cooperative Agreement
Awardee: University of North Carolina at Chapel Hill
School of Pharmacy
Chapel Hill, N.C. 27599-7360
Project Officer: C. McKeen Cowles
Division of Reimbursement and Economic Studies

Description: Under this study, a longitudinal 3-year data base on home intravenous (IV) drug usage in North Carolina and Florida will be constructed. Home infusion therapy drugs will also be identified and studied. A survey of North Carolina and Florida home IV drug providers will be taken to identify the current volume, composition, and source of payment for home IV drug therapy. A stratified sample of providers will be selected and sites will be visited. Patient charts will be reviewed and information on diagnoses, diagnosis-related groups, and patient outcomes will be abstracted.

Status: This project is in the developmental stage.

Estimating the Impact of the Medicare Catastrophic Coverage Act on the Elderly's Prescription Drug Use and Expenditures and Medicare Program Costs

Project No.: 17-C-99423/3-01
Period: August 1989-July 1990
Funding: $ 167,831
Award: Cooperative Agreement
Awardee: The People-To-People
Health Foundation, Inc.
Two Wisconsin Circle, Suite 500
Chevy Chase, Md. 20815
Project Officer: J. Daniel Babish
Division of Reimbursement and Economic Studies

Description: The project will be used to forecast the impact of the Medicare Catastrophic Coverage Act on prescription drug expenditures and on Medicare program outlays in 1991 and subsequent years. The impact of insurance coverage on prescription drug expenditures will also be assessed. The project will simulate the impact of alternative coinsurance rates and assess out-of-pocket expenditures by income level. Data from the 1987 National Medical Expenditures Survey (NMES) will serve as the basis for the forecasts. Estimates will be adjusted through the inclusion of correction factors for systematic under- or over-reporting of drug expenditures from an independently funded Prescription Drug Validation Survey. This study is mandated by Congress under the Medicare Catastrophic Coverage Act of 1988 (Public Law 100-360).

Status: The project is in the early developmental stage. Data from the Prescription Drug Validation Survey are being analyzed.

Impact of Medicare Catastrophic Coverage Act on Spending and Utilization

Project No.: 17-C-99395/1-01
Period: August 1989-August 1994

Funding: $ 1,596,230
Award: Cooperative Agreement
Awardee: Center for Health Economics Research
75 Second Avenue, Suite 100
Needham, Mass. 02194
Project Officer: J. Daniel Babish
Division of Reimbursement and Economic Studies

Description: This project is designed to study changes in Medicare spending and utilization per enrollee over time as catastrophic benefits are phased in. Issues to be studied include:

- Changes in the level and distribution of total Medicare spending for beneficiaries.
- Variations in spending and utilization for beneficiaries across geographic areas.
- Out-of-pocket liability per enrollee over time.
- Profiles of the actual users of catastrophic benefits.
- Treatment of high-cost illnesses over time.
- Beneficiaries in their last year of life.

An 11-State data base of all Medicare claims and eligibility data for the years 1987-92 will be constructed. The States to be studied are: Alabama, Arizona, Connecticut, Georgia, Kansas, New Jersey, Oklahoma, Oregon, Pennsylvania, Washington, and Wisconsin. The study is mandated by Congress under the Medicare Catastrophic Coverage Act of 1988 (Public Law 100-360).

Status: The project is in the early developmental stage. File construction has been initiated.

Medicare Catastrophic Coverage Act Evaluation: Impacts on Industry

Project No.: 500-89-0064
Period: September 1989-August 1994
Funding: $ 1,998,859
Award: Contract
Contractor: The Urban Institute
Health Policy Center
2100 M Street, NW.
Washington, D.C. 20037
Project Officer: Feather Ann Davis
Division of Reimbursement and Economic Studies

Description: The contractor will perform a series of research projects, all related to the analysis of the benefit changes introduced by the Medicare Catastrophic Coverage Act of 1988 (Public Law 100-360). The categories of impacts included in this award involve the assessment of the impacts on the health care industry, specifically, hospitals, nursing homes, physicians, home health agencies, medical equipment industry, health insurance industry, and drug industry. The analyses are designed to differentiate among the effects of the Medicare Catastrophic Coverage Act and other factors such as Medicare's prospective payment system.

Status: This project is in the early developmental stage. Work has begun in the areas of nursing home impacts and hospital impacts.

Medicare Catastrophic Coverage Act Evaluation: Beneficiary and Program Impacts

Project No.: 500-89-0063
Period: September 1989-August 1994
Funding: $ 2,194,141
Award: Contract
Contractor: Abt Associates, Inc.
55 Wheeler Street
Cambridge, Mass. 02138
Project Officer: Feather Ann Davis
Division of Reimbursement and Economic Studies

Description: The contractor will perform a series of research projects, all related to the analysis of the benefit changes introduced by the Medicare Catastrophic Coverage Act of 1988 (Public Law 100-360). The two general categories of impacts included are: the assessment of the impacts on the utilization and quality of care provided to Medicare and relevant Medicaid beneficiaries, and the assessment of the impact of the changes on the outlays of the Medicare and Medicaid programs. The analyses are designed to differentiate among the effects of the Medicare Catastrophic Coverage Act and other factors on the supply and use of health care services.

Status: This project is in the early developmental stage.

Medicare Case Management Demonstrations

Period: August 1989-February 1991
Funding: $ 2,368,340
Award: Cooperative Agreement
Awardees and Project Nos.:
The Health Data Institute
20 Maguire Road
Lexington, Mass. 02173
25-C-99433/3-01

Iowa Foundation for Medical Care
3737 Woodland Avenue, Suite 500
West Des Moines, Iowa 50265
25-C-99399/7-01

Key Care Health Resources, Inc.
5587 West 73rd Street
Indianapolis, Ind. 46268
25-C-99396/7-01

Providence Hospital
16001 West Nine Mile Road
P.O. Box 2043
Southfield, Mich. 48037
25-C-99379/5-01

Project Officers: Kathleen M. Farrell
Division of Hospital Experimentation
Rosita McKee
Division of Health Systems and Special Studies

Description: Section 425 of the Medicare Catastrophic Coverage Act of 1988 (Public Law 100-360) mandates that the Health Care Financing Administration establish four demonstration projects to determine the cost effectiveness of case management services under Medicare. The demonstrations are designed to:

- Evaluate the appropriateness of providing case management services under Medicare for beneficiaries with catastrophic illness and high medical care costs.
- Determine the most effective approach to implementing a case management system under the Medicare program for such individuals.
- Improve coordinated use of available Medicare benefits in a more efficient and cost-effective manner.

In August 1989, HCFA awarded cooperative agreements to the following organizations:

- The Health Data Institute.
- Iowa Foundation for Medical Care.
- Key Care Health Resources, Inc.
- Providence Hospital.

Each organization will be responsible for performing the following services:

- The identification of Medicare beneficiaries likely to incur high medical care costs for conditions potentially responsive to alternative patterns of medical care.
- The development of individualized needs assessment and alternative plans of medical care.
- The coordination and/or delivery of the most efficient and effective mix of services.

Status: All four demonstration sites are currently in the 6-month development phase of the project. Each demonstration site is expected to begin providing case management services by mid-1990.

Evaluation of the Medicare Case Management Demonstrations

Project No.: 500-87-0028
Period: September 1989-October 1993
Funding: $ 782,262
Award: Technical Support: Evaluation of Demonstrations
(See page 80)
Contractor: Mathematica Policy Research, Inc.
P.O. Box 2393
Princeton, N.J. 08543
Task Leader: James P. Hadley
Division of Health Systems and Special Studies

Description: Mathematica Policy Research, Inc. will evaluate four fee-for-service case management demonstrations in terms of implementation success, beneficiary receptivity, cost effectiveness, and quality of care. The four demonstrations, Health Data Institute (a private case management firm), Iowa Foundation for Medical Care (a peer review organization), Key Care (a Medicare fiscal intermediary), and Providence Hospital, will use a number of different approaches to target and case manage a variety of high-cost illnesses. This project is mandated by Congress under Section 425 of the Medicare Catastrophic Coverage Act of 1988 (Public Law 100-360).

Status: The contract is in the early developmental stage. The contractor will present a research design for the cross-cutting evaluation in early 1990.

Long-Term Care: Elderly Service Use and Trends

Project No.: 17-C-99376/3-01
Period: August 1989-August 1990
Funding: $ 245,249
Award: Cooperative Agreement
Awardee: The Brookings Institution
175 Massachusetts Avenue, NW.
Washington, D.C. 20036-2188
Project Officer: Judith A. Sangl
Division of Reimbursement and Economic Studies

Description: This project, mandated under the Medicare Catastrophic Coverage Act of 1988 (Public Law 100-360), has three objectives:

- An analysis of the financial status of nursing home users.
- An analysis of the determinants of home care use.
- Projections of the numbers and level of disability among the elderly and their use of long-term care services.

Data from the following major surveys will be used: the 1982-84 National Long-Term Care Surveys, the 1984-86 Supplement on Aging/Longitudinal Study of Aging, and the 1984 Survey of Income and Program Participation. Data will be analyzed using cross-tabulations, logistic and least squares regression analyses, and the Brookings/ICF simulation model (updated and revised).

Status: The study is in its early developmental stage and analytical data files are being developed.

Other Studies

Hospice Benefit Program Evaluation (Medicare)

Project No.: 500-85-0024
Period: September 1984-June 1989
Funding: $ 1,295,156
Award: Contract
Contractor: Abt Associates, Inc.
55 Wheeler Street
Cambridge, Mass. 02138
Project Officer: Feather Ann Davis
Division of Reimbursement and Economic Studies

Description: This contract addresses many of the questions raised by the Tax Equity and Fiscal Responsibility Act of 1982 (Public Law 97-248) and Deficit Reduction Act of 1984 (Public Law 98-369). The evaluation studies were to determine whether or not the reimbursement method and benefit structure of the hospice benefit are fair and equitable and promote the most efficient provision of hospice care. Also, recommendations for legislative changes were to be made as appropriate. Health Care Financing Administration administrative data, Medicare Part A and Part B claims, plus hospice cost-report data were used as the basis of several types of analyses. The final report will address how the Medicare hospice benefit has affected the U.S. hospice industry; whether or not hospice care as reimbursed by Medicare is a cost-effective alternative to more aggressive or less intensive non-hospice interventions; what factors explain differences in hospice and non-hospice expenditures; and projections of effects of certain changes in the hospice benefit.

Status: An interim report, entitled "Medicare Hospice Benefit Program Evaluation," is available from the National Technical Information Service, accession number PB87-188678. The final report, entitled "Medicare Hospice Benefit Program Evaluation: Final Summary Report," is also available, accession number PB90-150053. Findings include:

- In fiscal year 1986, hospice benefit payments of $20 million for about 10,500 Medicare beneficiaries who elected the benefit were less than 1 percent of the total Medicare Part A expenditures.
- No significant increase in costs or savings to the Medicare program could be attributed to the Medicare hospice benefit during the period 1984-86.
- Cost savings of freestanding hospices, compared with net additional costs in provider-based hospices, resulted from leverage from the freestanding and home health agency-based hospice beneficiaries, for whom savings were estimated to be strongly positive. Hospital-based and skilled nursing facility-based hospice beneficiaries incurred net costs.
- Analysis of fiscal year 1985 combined Part A and B expenditures, after adjustment, showed no difference between conventional care patient costs and those of hospice benefit patients.
- Analysis of the nonrandom, usable Medicare hospice cost reports submitted in 1985 and 1986 indicate that certified hospices are larger than are noncertified hospices (random, stratified sample), and they have lower average daily costs and considerably lower costs per discharge.
- Certified hospices that submitted cost reports generally experienced positive net Medicare revenues during the study period, with 86 percent having positive net revenues from Medicare. A few hospices did suffer losses. Certified hospices were generally able to earn positive net revenues while conforming to the reimbursement and inpatient day limits of the Medicare program.
- A simulation suggests that the sample of noncertified hospices also would have profited under the benefit, with three-quarters expected to have earned positive net revenues had they participated in the Medicare hospice benefit.

Noncertified Hospice Cost Analysis

Project No.: 500-85-0038
Period: September 1984-July 1988
Funding: $ 1,656,879
Award: Contract
Contractor: Jack Martin and Company
30150 Telegraph Road, Suite 155
Birmingham, Mich. 48010
Project Officer: Feather Ann Davis
Division of Reimbursement and Economic Studies

Description: The objectives of the contract are to determine:

- The costs associated with hospices that are not certified to receive reimbursement under the Medicare hospice benefit.
- The characteristics of noncertified hospices and their patient populations.
- How costs vary across different types of hospices and different patient populations.
- Why noncertified hospices elected not to participate in the Medicare hospice benefit.

A representative, stratified sample of noncertified hospices was drawn. Three types of hospice organizations were defined: community based (located in home health agencies), hospital based, and independent (sole mission is the provision of hospice care, may be a freestanding patient facility or home care based). Data from fiscal years 1985 and 1986 were collected by certified public accountants in the 92 participating hospices.

Status: The two-volume final report, entitled "Noncertified Hospice Cost Analysis," is available from the National Technical Information Service. The Executive Summary is accession number PB90-163569 and the Final Report is accession number PB90-163577. Findings include:

- All three models of hospice were operating, on average, below the Medicare cap on average cost per patient of $6,500. Hospital-based hospices had the highest average per patient costs of $5,547 in fiscal year 1986. Independent hospices had the lowest, with average per patient costs of $3,776 in fiscal year 1986. Those few hospices that exceeded the Medicare per patient cap were characterized by smaller patient volumes, greater relative use of inpatient care, lower percentages of nursing hours within home care, less use of part-time volunteers, lower levels of patient functional ability, and younger patient ages.
- The mean patient capacity was 32.7; and 79 percent of the noncertified hospices could handle 30 or fewer patients.
- Ninety-four percent of the noncertified hospice patients were enrolled for less than 210 days (the original Medicare benefit limit); more than three-quarters of hospice patients had lengths of stay equal

to or less than 90 days. The three hospice types represented appreciably different cost environments. Independent hospices appeared especially different from their community- and hospital-based counterparts, especially in the effects of their staffing patterns on costs.
- Despite the cost-analysis findings that the majority of noncertified hospices were within the limits of the Medicare hospice benefit's per patient costs and use of inpatient care, the interviewed administrators expressed concern that the benefit restrictions regarding per patient cost, use of inpatient care, and staffing requirements posed unacceptable financial risks.
- There is a clear need for hospice administrators to gain greater awareness of their hospices' financial structures to enable them to properly consider Medicare certification.

Population-Based Study of Hospice

Project No.: 18-C-98674/0-03
Period: September 1984-June 1988
Funding: $ 741,165
Award: Cooperative Agreement
Awardee: Fred Hutchinson Cancer Research Center
Project Officer: Feather Ann Davis
Division of Reimbursement and Economic Studies

Description: The purpose of the cooperative agreement was to study:
- Health service utilization among hospice and non-hospice terminal cancer patients.
- The effects of hospital prospective reimbursement on hospice case load and length of stay.
- The extent of hospice penetration of the market.

Seven data sets were linked to provide both economy and power. The area under study comprises 13 counties in western Washington. The comparison of health utilization patterns among hospice and non-hospice participants entailed the use of four types of hospices and two types of non-hospice groups, those with at least one home health visit and those that did not have home care.

Status: Four distinct studies were conducted and are presented separately in the final report, "A Population-Based Study of Hospice." It is available from the National Technical Information Service, accession number PB90-162587. Findings from the studies conclude that:
- During the last month of life, hospice patients in three of the four types of hospices (home health, hospice-only, and community-based) used fewer hospital and skilled nursing facility days than patients in the home health conventional care group. No consistently lower inpatient utilization for hospice patients was found in the other months of the last year of life. Three multivariate models showed greater home health utilization among the home health agency-based and community-based hospice patients than among other hospice and non-hospice patients. No consistent effect of the prospective payment system was found.
- Use of hospice is more likely among those who are more advantaged and are more likely to have social support. Characteristics of patients' followup hospitals were important in the use of hospice; physician characteristics were unrelated to hospice use. The patients who were diagnosed close to death were less likely to use hospice than were those diagnosed earlier. Among those diagnosed early, those with distant stage disease were more likely to use hospice than were those with a less severe stage cancer. Persons with brain and central nervous system tumors were most likely to use hospice.
- Hospice participation was the major determinant of death at home. Admission to a hospice program overrode the tendency for certain subgroups of patients to die in an institutional setting. The median length of stay in hospice was 33 days, with currently married patients more likely to have lower lengths of stay than single or previously married or widowed patients. Patients with private insurance or no coverage had shorter stays than patients with Medicaid who had longer hospice stays. The patient's functional status was the variable most strongly related to length of stay.

Research on Competitive Forces Driving Medicare Utilization

Project No.: 17-C-98522/9-02
Period: September 1984-November 1988
Funding: $ 246,495
Award: Cooperative Agreement
Awardee: SRI International
333 Ravenswood Avenue
Menlo Park, Calif. 94025
Project Officer: Judith A. Sangl
Division of Reimbursement and Economic Studies

Description: The major objective of this project is to analyze how various factors affect Medicare beneficiaries' utilization of and expenditures for services. These factors include: ownership of supplemental health insurance policies, beneficiaries' knowledge of the Medicare program and of the supplemental policies they own, and the extent to which beneficiaries are treated on assignment by physicians. Data sources include: a detailed 1982 survey of a random sample of Medicare beneficiaries in six States (California, Florida, Mississippi, New Jersey, Washington, and Wisconsin), copies of the insurance policies owned by beneficiaries in this sample, and complete Medicare utilization records for this sample from 1980 to 1982.

Status: Two papers were produced. "The Effectiveness of Consumer Choice in the Medicare Supplemental Health Insurance Market" shows that ownership of supplemental insurance is strongly linked to higher levels of income and assets and knowledge of Medicare, and that ownership of effective policies (i.e., those that

provide for real supplementation of Medicare through coverage of inpatient and outpatient care for all illnesses) is further related to these higher income and asset levels and to higher educational levels. Ownership of more than one supplemental policy is more likely to occur among those who work or whose spouses work, those with property, and those who are more highly educated, although it is less likely to occur among urban beneficiaries and those who are married. Ownership of only less effective policies is more common among beneficiaries in the older age group and less common among those more highly educated. All races other than white are significantly less likely to own any kind of policy: one policy, two or more policies, effective policies, or less effective policies. The second paper, "The Effect of Private Insurance on Utilization: Evidence from the Medicare Population," indicates that the effect of supplemental insurance coverage on utilization of services is strongest for those in poor or fair perceived health. It is also strongest for the use of services, and less so for the level of use by service users. The effect is even more dramatic for those in poor or fair health having a policy with first-dollar coverage.

Wisconsin Welfare Reform Demonstration

Project No.: 11-C-99154/5-01
Period: October 1987-September 1990
Award: Cooperative Agreement
Awardee: Wisconsin Department of Health and Social Services
P.O. Box 7850
Madison, Wis. 53702
Project Officer: Bonnie M. Edington
Division of Health Systems and Special Studies

Description: This demonstration has waivers from the Health Care Financing Administration and the Family Support Administration, permitting:

- A "learnfare" requirement that teenage recipients of Aid to Families with Dependent Children (AFDC) be in school.
- A requirement that parents whose youngest child is over 3 months of age register for work or training.
- Major changes in the disregard of earnings, with less being disregarded in the initial 4 months of work and more in the subsequent 8 months.
- A Medicaid extension of 12 months for recipients who lose AFDC eligibility because of earnings, regardless of income increases during the extension period.

Status: Major welfare reform legislation, the Family Support Act, became law in October 1988. This law embodies many of the components of the current welfare reform demonstrations. Under the law, a Medicaid extension up to 12 months would be given to people working their way off welfare as of April 1990. The first 6 months of this extension would be given regardless of income; the remaining 6 months are contingent upon earnings below 185 percent of the Federal poverty level. Wisconsin implemented its Medicaid extension waiver in February 1989. The impact of the new legislation on this demonstration is not yet known.

New Jersey Welfare Reform: Realizing Economic Achievement (REACH)

Project No.: 18-C-99156/2-01
Period: October 1987-September 1992
Award: Cooperative Agreement
Awardee: New Jersey Department of Human Services
222 South Warren Street
Trenton, N.J. 08625
Project Officer: Bonnie M. Edington
Division of Health Systems and Special Studies

Description: This demonstration has waivers from the Health Care Financing Administration and the Family Support Administration. The project requires recipients of Aid to Families with Dependent Children (AFDC) whose youngest child is over the age of 2 to participate in employment-related activities. Additional day-care services are provided. A Medicaid extension of 12 months, regardless of earnings, is provided to recipients who work their way off welfare, in lieu of the current law's 4-, 9-, and 15-month extensions.

Status: In October 1987, the project began statewide implementation of the 12-month Medicaid extension, with the months in excess of the current law funded totally by the State, pending Federal savings from other demonstration components. Other components were phased into various counties throughout the first 2 years of the demonstration. Major welfare reform legislation, the Family Support Act, became law in October 1988. This law embodies many of the components of the current welfare reform demonstrations. Under the law, a Medicaid extension up to 12 months would be given to people working their way off welfare as of April 1990. The first 6 months of this extension would be given regardless of income; the remaining 6 months are contingent upon earnings below 185 percent of the Federal poverty level. The impact of the new legislation on this demonstration is not yet known.

Texas Welfare Reform: Toward Independence

Project No.: 11-C-99620
Period: July 1989-June 1992
Award: Cooperative Agreement
Awardee: Texas Department of Human Services
P.O. Box 2960
Austin, Tex. 78769
Project Officer: Bonnie M. Edington
Division of Health Systems and Special Studies

Description: This demonstration has waivers from the Health Care Financing Administration and the Family Support Administration. Experimental interventions are a 12-month extension of child care benefits, and

Medicaid extension of 6 to 12 months for people who work their way off welfare.

Status: Major welfare reform legislation, the Family Support Act, became law in October 1988. This law embodies many of the components of the current welfare reform demonstrations. Under the law, a Medicaid extension up to 12 months would be given to people working their way off welfare as of April 1990. The first 6 months of this extension would be given regardless of income; the remaining 6 months are contingent upon earnings below 185 percent of the Federal poverty level. With waivers, Texas implemented the extension in the Family Support Act 9 months early.

Washington State Welfare Reform: Family Independence Program

Project No.: 11-C-99582/0-01
Period: July 1988-June 1993
Award: Cooperative Agreement
Awardee: Washington State Department of Social and Health Services
Mail Stop OB-44
Olympia, Wash. 98504
Project Officer: Bonnie M. Edington
Division of Health Systems and Special Studies

Description: This demonstration has waivers from the Health Care Financing Administration, the Family Support Administration, and the Department of Agriculture (food stamps). In the experimental areas of the State, as an incentive to become employed, recipients of Aid to Families with Dependent Children are given larger welfare benefits if they accept work-related training, are permitted to keep larger proportions of their earnings if they work, to receive a cash equivalent to the value of food stamps, and have a 12-month Medicaid extension when they work their way off welfare, regardless of earnings.

Status: Major welfare reform legislation, the Family Support Act, became law in October 1988. This law embodies many of the components of the current welfare reform demonstrations. Under the law, a Medicaid extension up to 12 months would be given to people working their way off welfare as of April 1990. The first 6 months of this extension would be given regardless of income; the remaining 6 months are contingent upon earnings below 185 percent of the Federal poverty level. The impact of the new legislation on this demonstration is not yet known.

Ohio Welfare Reform: Transitions to Independence

Project No.: 11-C-99619
Period: January 1988-February 1994
Award: Cooperative Agreement
Awardee: Ohio Department of Human Services
30 East Broad Street
Columbus, Ohio 43266-0423
Project Officer: Bonnie M. Edington
Division of Health Systems and Special Studies

Description: This demonstration has waivers from the Health Care Financing Administration, the Family Support Administration, and the Department of Agriculture (food stamps). Experimental interventions are:

- Learnfare for Aid to Families with Dependent Children (AFDC) teenagers, giving incentive payment for school attendance and financial penalty for nonattendance.
- Mandatory work or training program for AFDC recipients whose youngest child is 6 years of age or over.
- Voluntary work or training for AFDC recipients whose youngest child is under 6 years of age, with a 12-month Medicaid extension for those who work their way off welfare.

Status: Major welfare reform legislation, the Family Support Act, became law in October 1988. This law embodies many of the components of the current welfare reform demonstrations. Under the law, a Medicaid extension up to 12 months would be given to people working their way off welfare as of April 1990. The first 6 months of this extension would be given regardless of income; the remaining 6 months are contingent upon earnings below 185 percent of the Federal poverty level. The impact of the new legislation on this demonstration is not yet known.

New York Welfare Reform: Child Assistance Program

Project No.: 11-C-99583/2-01
Period: October 1988-September 1993
Award: Cooperative Agreement
Awardee: State of New York
Department of Social Services
40 North Pearl Street
Albany, N.Y. 12243
Project Officer: Bonnie M. Edington
Division of Health Systems and Special Studies

Description: This demonstration has waivers from the Health Care Financing Administration, the Family Support Administration, and the Department of Agriculture (food stamps). In the experimental areas, as an incentive to employment and to filing court orders for child support, recipients of Aid to Families with Dependent Children (AFDC) who go to work and file for child support have more of their earnings and the collected child support disregarded, in the calculation of their income for AFDC eligibility. Since this is expected to keep recipients eligible for welfare for a somewhat longer period during employment, those who work their way off welfare receive only a 4-month Medicaid extension. The control group receives current law's 4-, 9-, or 15-month Medicaid extensions, and lower income families receive the longer extensions.

Status: Major welfare reform legislation, the Family Support Act, became law in October 1988. This law embodies many of the components of the current welfare reform demonstrations. Under the law, a Medicaid extension up to 12 months would be given to

people working their way off welfare as of April 1990. The first 6 months of this extension would be given regardless of income; the remaining 6 months are contingent upon earnings below 185 percent of the Federal poverty level. The impact of the new legislation on this demonstration is not yet known.

Providing Technical Assistance to the Advisory Council on Social Security

Project No.: 99-C-99168/3-02
Period: August 1989-July 1990
Funding: $ 306,669
Award: Cooperative Agreement
Awardee: Project Hope Research Center
(See page 79)
Task Leader: Gerald F. Riley
Division of Beneficiary Studies

Description: In June 1989, the Secretary of the U.S. Department of Health and Human Services established a 13-member Advisory Council on Social Security. The Secretary has asked the Council to review the following areas:

- The long-range financial status of the Social Security program.
- The relationship of the Social Security trust funds to the Federal budget.
- The role of Social Security in the U.S. retirement income policy.
- The impact of long-term care on the Medicare program.
- The adequacy and long-term capability of Medicare and Medicaid to finance the health and long-term care needs of the U.S. population.

The charter requires the Council to report to the Secretary and Congress by January 1, 1991. The Council has appointed an executive director who has assembled a small technical staff. Given the broad mandate, a limited timeframe, and a relatively small staff, the Council has sought assistance from the Health Care Financing Administration and Project Hope to supplement the work of the staff. Project Hope is: assisting the Council in preparing for meetings and hearings; preparing background analyses and developing an impact analysis model; drafting Council background papers; and drafting interim and final reports of the Council.

Status: A briefing book was prepared for the first meeting of the Council. A briefing book and papers are being prepared for the second Council meeting. No findings are available yet. A draft report concerning health issues is expected in July 1990.

Evaluation of Employer-Sponsored Retiree Health Insurance

Project No.: 18-C-99181/5-01
Period: June 1988-December 1989
Funding: $ 187,919
Award: Cooperative Agreement
Awardee: University of Illinois at Chicago
P.O. Box 4348
Chicago, Ill. 60680
Project Officer: Gerald F. Riley
Division of Beneficiary Studies

Description: The project uses data from the Employee Benefits Survey (1981-87) from the Bureau of Labor Statistics and from the Survey of Income and Program Participation (1984) from the Bureau of the Census to perform the following tasks:

- Describe the extent of retiree health insurance coverage, including how coverage varies across segments of the population and how it has changed in recent years. Describe the content of such coverage, such as services covered and cost-sharing provisions.
- Use econometric models to determine how medium and large firms decide to offer coverage and the characteristics of that coverage.
- Determine in what ways employee retiree benefits and medigap policies exceed Medicare coverage among the aged.
- Determine the number of aged in the United States who currently have various types of supplemental insurance and combinations of such insurance.
- Determine the prevalence and causes of benefit termination among retirees.
- Assess the implications of these findings on Medicare policy and on the regulation of employer-sponsored retiree health coverage.

Status: The cooperative agreement was extended for 6 months to add a task that will describe the ways in which firms coordinate their employee health benefits with Medicare for their retirees. The information was gathered through a survey that was implemented in October 1988. A draft report on "Employer-Sponsored Post-Retirement Health Insurance: Benefits and Coordination" has been received and is being reviewed. Additional reports are expected during the next several months.

Medicare Financing Simulation Model

Project No.: 99-C-98526/1-05
Period: August 1988-November 1989
Funding: $ 34,553
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: Jesse M. Levy
Division of Reimbursement and Economic Studies

Description: The purpose of this project is to assess the feasibility of adapting The Urban Institute's Transfer Income Model (TRIM) to perform policy simulations on the Medicare program. The objectives are to assess the feasibility of developing a model within TRIM to assess the effects of changes in cost sharing, covering the use of services, physician and hospital payments, and

financial outlays of the Medicare program, and to determine the effect of different catastrophic insurance thresholds, income-related premiums, and any of these kinds of policy changes on different income and wealth groups as well as differences among geographical areas. This research task will also enable the Health Care Financing Administration to determine the effect of these changes on Medicaid eligibility.

Status: The final report has been received, and it will be submitted to the National Technical Information Service.

Pricing and Coverage Decisions for New and Existing Technologies

Project No.: 99-C-99168/3-02
Period: August 1988-July 1990
Funding: $ 71,877
Award: Cooperative Agreement
Awardee: Project Hope Research Center
(See page 79)
Task Leader: William J. Sobaski
Division of Reimbursement and Economic Studies

Description: The purpose of the project is to develop a methodology or set of methodologies to accurately price new and existing technologies that have been approved for Medicare coverage under Medicare Part A and Part B.

Status: During the project's first year, working papers were developed on technology issues in Medicare coverage and reimbursement and on methodological options and selection criteria that might be used to determine equitable payments for new technologies. A list of newer technologies and a bibliography on technology issues were prepared. In the coming year, a report illustrating applications of selected methodologies is planned.

An Analysis of Medicare Expenditures for Ambulance Services

Project No.: 99-C-99168/3-02
Period: August 1989-July 1990
Funding: $ 127,834
Award: Cooperative Agreement
Awardee: Project Hope Research Center
(See page 79)
Task Leader: Herbert A. Silverman
Division of Program Studies

Description: This project is designed to analyze spending for ambulance services under Medicare. Both the nature and composition of spending for ambulance services and the amount of ambulance services used by beneficiaries with different characteristics will be examined. An attempt will be made to measure the difference between Medicare payments for basic ambulance transportation and the payments that would have been made had other transportation alternatives been used.

Status: The project is in the early developmental phase

Study of Inappropriate Use of Medications by Medicare Beneficiaries

Project No.: 99-C-99169/5-01
Period: October 1988-April 1989
Funding: $ 23,279
Award: Cooperative Agreement
Awardee: University of Minnesota Research Center
(See page 79)
Task Leader: Dennis M. Nugent
Division of Long-Term Care Experimentation

Description: Medications prescribed by physicians and consumed by their patients are sometimes ineffective or even harmful. For both physiologic and social reasons, the elderly are susceptible and vulnerable to the consequences of taking unnecessary or deleterious medication more than any other age group. Before developing a policy to address this issue, it is important to have reliable estimates of the prevalence of inappropriate medication use among the elderly population and to understand why it occurs. The purpose of this study is to review and summarize the existing literature to determine the magnitude of the problem and identify future research directions.

Status: The final report, "Study of Inappropriate Use of Medications by Medicare Beneficiaries," has been received and is expected to be available from the National Technical Information Service by mid-1990. Although the report does not certify the extent of inappropriate medication use by elderly Medicare beneficiaries, it does suggest that overuse of medications, adverse drug reactions, drug interactions, and noncompliance are common in the elderly. The final report recommends a research agenda which includes developing improved criteria for judging the appropriateness of medication use and applying these criteria to a population-based sample of elderly Medicare beneficiaries.

Use of Medicare Services by Disabled Enrollees Under 65 Years of Age

Funding: Intramural
Project Director: Gerald F. Riley
Division of Beneficiary Studies

Description: More research has been devoted to the Medicare aged population than to the population of disabled enrollees under 65 years of age. Yet disabled enrollees comprise about 10 percent of Medicare enrollment, and Medicare expenditures for them have been rising faster than for aged enrollees. To increase knowledge of the Medicare disabled population, analyses were carried out on patterns of health services used by the disabled. In particular, this population was analyzed by type of disability award, i.e., disabled worker, adult disabled in childhood, or disabled spouse. Also, the aged (65 years of age or over) Medicare

population who were formerly disabled Medicare beneficiaries were studied. In a second study, Medicare utilization data have been linked to Social Security Administration (SSA) data on a cohort of disabled workers who first became entitled to disability benefits in 1972. Their Medicare use from 1974 through 1981 was studied to explore the relation of disability characteristics to Medicare use over time. The specific objectives of the project were to:

- Describe the levels and patterns of reimbursable Medicare costs over time at the individual level for a cohort of disability beneficiaries from 1974 through 1981.
- Identify the characteristics of disabled beneficiaries that are associated with different reimbursement levels and patterns.
- Describe the individual costs and utilization components that comprise overall reimbursement amounts.

Status: The following articles have been published:

- Lubitz, J., and Pine, P.: Health care use by Medicare's disabled enrollees. *Health Care Financing Review*. Vol. 7, No. 4. HCFA Pub. No. 03223. Office of Research and Demonstrations, Health Care Financing Administration, Washington. U.S. Government Printing Office, Summer 1986.
- Bye, B., Riley, G., and Lubitz, J.: Medicare utilization by disabled-worker beneficiaries: A longitudinal analysis. *Social Security Bulletin.* Vol. 50, No. 12. Pub. No. SSA 13-11700. Office of Research and Statistics, Social Security Administration. Washington. U.S. Government Printing Office, December 1987.
- Bye, B., and Riley, G.: Eliminating the Medicare waiting period for Social Security disabled-worker beneficiaries. *Social Security Bulletin.* Vol. 52, No. 5. Pub. No. SSA 13-11700. Office of Research and Statistics, Social Security Administration. Washington. U.S. Government Printing Office, May 1989.

The Health Care Financing Administration and SSA are planning to link additional years of disability and Medicare data (through 1985) in the next several months.

Studies of Medicare Use Before Death

Funding: Intramural
Project Officers: Gerald F. Riley and James D. Lubitz
Division of Beneficiary Studies

Description: These studies examine the use of Medicare services in the last years of life. This information is needed because of the large percent of Medicare expenditures for enrollees in their last year and because of the interest in hospice care as an alternative kind of care for the terminally ill.

Status: Findings from the first study indicate that:

- Twenty-eight-percent of Medicare expenditures are for persons in their last year.
- These persons receive more than six times the reimbursements of other enrollees.
- Expenditures in the last year are concentrated in the last few months.
- The relative share of Medicare expenditures going to enrollees in their last year has changed little from 1967 to 1979.

The results of this study were published in the following article: Lubitz, J., and Prihoda, R.: Use and costs of Medicare services in the last 2 years of life, *Health Care Financing Review*, Vol. 5, No. 3, Spring 1984. A second study analyzes Medicare use by cause of death. The study uses cause of death data from the National Center for Health Statistics linked to Medicare data. Medicare expenditures in the last year are examined by cause of death (e.g., cancer, heart attack), type of service, age, and sex. Results indicate there is considerable variation in Medicare reimbursements in the last year of life, by cause of death. The results of this study were published in: Riley, G., Lubitz, J., Prihoda, R., and Rabey, E.: The use and costs of Medicare services by cause of death, *Inquiry*, Vol. 24, No. 3, Fall 1987. Another article is being published: Riley, G., and Lubitz, J.: Longitudinal patterns of Medicare use by cause of death. *Health Care Financing Review*, Vol. 11, No. 2, Winter 1989. This article features an analysis of trends in the use of Medicare services, by cause, for up to 6 years before death.

Medicare Cohort Studies

Funding: Intramural
Project Director: Alma B. McMillan
Division of Beneficiary Studies

Description: The 5-percent Continuous Medicare History Sample file has been aggregated for 12 years (1974-85). The file makes it possible to study patterns and trends in the use and costs of services, as well as outcomes of care, for a cohort of Medicare enrollees newly enrolled in 1974. The objective of this project is to follow a cohort of aged enrollees for a period of 10 or 11 years. Several studies will be designed to examine these questions:

- What are the utilization histories for people on the program after 10 years?
- Do the same persons have "high" services year after year?
- What is the natural history of enrollees after events like fracture of the femur?
- What combination of illnesses (cancer, heart disease, etc.) do people have over a 10-year period?

The answers to these questions (and other similar ones) will be an invaluable addition of new information on the aged Medicare population.

Status: The study focuses on newly enrolled persons 65 years of age in 1974 and 1975; preliminary data have been received from the Bureau of Data Management and Strategy (BDMS), Health Care Financing Administration. Consistency checks have been completed on these tabulations, and BDMS is currently

developing some utilization data, i.e., number and rate of hospital stays and reimbursement for Parts A and B. Preliminary data indicate that, in 1974, there were 1,438,000 newly enrolled persons 65 years of age with both Medicare Parts A and B. In 1985, about 1,036,000 of this cohort, or 72 percent, had reached age 76 and were still enrolled. In 1975, about 50 percent of the cohort had no reimbursed services; in 1985, the proportion was 24 percent.

Health Care Prevention and Access

Prevention

Prevention of Falls in the Elderly

Project No.: 95-C-98578/9-03
Period: September 1984-December 1989
Funding: $ 695,894
Award: Cooperative Agreement
Awardee: Kaiser Foundation Research Institute
Health Services Research Center
4610 Southeast Belmont Street
Portland, Ore. 97215
Project Officer: Margaret A. Coopey
Division of Long-Term Care Experimentation

Description: In September 1984, a cooperative agreement was awarded to the Kaiser Foundation Research Institute primarily to test both the cost effectiveness of a comprehensive environmental and behavioral program designed to prevent falls among persons 65 years of age or over and to estimate the net financial benefits or costs to a health maintenance organization and the Medicare program of a given level of falls prevention for a defined target population. The secondary objective is to increase understanding of the epidemiology of falls and associated injuries, and to develop an improved method of predicting the risk of falls in an elderly population. Funding support for this demonstration was supplemented by the National Institute on Aging, the Robert Wood Johnson Foundation, and Kaiser Foundation Hospitals, Inc. The project has been conducted at the Health Services Center, Kaiser Permanente Medical Care Program in Portland, Oregon. This is a randomized study of 2,509 household members of Kaiser, who are 65 years of age or over, for a total of 3,182 participants. All participants received an initial home audit to assess their environmental and physical risk factors for falls. They were then randomized into one of two groups, an intervention group and an assessment-only control group. The intervention group received a special falls prevention program that included a self-management educational curriculum and the installation of safety equipment and minor home renovations to correct identified safety hazards. Data on the incidence of falls, and associated morbidities and fall-related medical care utilization, was collected for a period of 2 years on both the control and intervention groups through self reports by the study participants. In addition, a retrospective audit of the participants' medical records will be completed to validate the incidence of falls requiring medical care and to determine the associated medical care costs.

Status: The project is in its fifth year of operation. The followup period to assess the incidence of falls ended December 1987. The cooperative agreement was extended until December 1989 to allow completion of the evaluation of the program's effectiveness in lowering the frequency and severity of falls and to determine whether it is cost effective (i.e., whether the cost of the intervention is offset by the savings in medical care costs associated with the prevented falls). The final report is expected mid-1990.

The Economy and Efficacy of Medicare Reimbursement for Preventive Services

Project No.: 95-C-98516/4-05
Period: September 1985-September 1991
Funding: $ 1,800,000
Award: Cooperative Agreement
Awardee: University of North Carolina
Department of Social and Administrative Medicine
300 Bynam Hall, 008A
Chapel Hill, N.C. 21514
Project Officer: Sherrie L. Fried
Division of Health Systems and Special Studies

Description: The University of North Carolina at Chapel Hill has implemented the preventive services demonstration in the Research Triangle area using community clinics. Participants identified from the registers of cooperating clinics were invited to participate. They were randomly allocated to one of four groups: clinical screening only, health promotion only, clinical screening plus health promotion, and the usual care control. The total sample size is approximately 2,400. Clinical screening and health promotion services are reimbursed separately at annual rates of $59.94 for screening and $44.33 for health promotion services. The evaluation will be conducted by the Department of Social and Administrative Medicine and the Health Services Research Center of the University of North Carolina at Chapel Hill.

Status: In October 1986, the project began offering clinical screening, health promotion, and followup services to appropriate participants. In June 1988, the project reached its target population of 2,400 clients, and recruitment for preventive services has ended. Followup interviewing of demonstration beneficiaries is occurring. Record audits are being completed at two demonstration sites. The Division of Research and Demonstrations Systems Support, Health Care Financing Administration, is processing claims for reimbursement submitted by demonstration providers.

Preventive Health Services for Medicare Beneficiaries: Demonstration and Evaluation

Project No.: 95-C-99162/3-02
Period: May 1988-April 1992
Funding: $ 1,320,000
Award: Cooperative Agreement
Awardee: The Johns Hopkins University
School of Hygiene and Public Health
624 North Broadway
Baltimore, Md. 21205
Project Officer: Sherrie L. Fried
Division of Health Systems and Special Studies

Description: The demonstration will provide preventive services to a representative population of Medicare beneficiaries residing in the eastern half of Baltimore City. After a baseline interview, covering areas of health status, risk, and sociodemographics, the population will be randomly assigned to either an intervention or control group. The preventive services screening and intervention will be performed by the beneficiary's own physician. Johns Hopkins University will also be conducting a comprehensive evaluation to assess the cost effectiveness of providing preventive services.

Status: The implementation phase of the demonstration began in May 1988. A detailed implementation protocol for the demonstration was submitted and approved by the Health Care Financing Administration. The project has reached its target enrollment for recruiting beneficiaries for the demonstration. The baseline interview is being conducted, and beneficiaries are being randomly assigned into treatment and control groups. Providers have begun delivering the preventive services intervention to beneficiaries enrolled in the treatment group.

Preventive Health Services for Medicare Beneficiaries: San Diego Demonstrative Project

Project No.: 95-C-99160/9-01
Period: May 1988-April 1992
Funding: $ 1,160,000
Award: Cooperative Agreement
Awardee: San Diego State University Foundation
Graduate School of Public Health
San Diego State University
San Diego, Calif. 92182-1900
Project Officer: Debbie Callahan
Division of Health Systems and Special Studies

Description: Medicare patients who are currently enrolled in the Secure Horizons health maintenance organization will be targeted for preventive services. Approximately 1,800 enrollees have been randomly assigned to either a treatment or control group. The San Diego School of Public Health will conduct a comprehensive evaluation to assess the cost effectiveness of providing preventive services.

Status: This project is currently in the implementation phase. A detailed implementation protocol was reviewed and approved prior to implementation. To date, the demonstration has conducted 32 orientation sessions. Baseline clinical assessments were completed for each participant enrolled in the demonstration (both treatment and control). The treatment group is currently taking part in several wellness workshops, which comprise the intervention. Through these workshops, participants are provided with individual counseling and feedback based on results of several questionnaires (i.e., health risk appraisal, health status inventory, and the CES-D depression scale from the Center for Epidemiologic Studies, Centers for Disease Control). Participants are referred for followup care as appropriate.

University of California, Los Angeles, Medicare Preventive Demonstration

Project No.: 95-C-99165/9-01
Period: May 1988-April 1992
Funding: $ 1,328,000
Award: Cooperative Agreement
Awardee: University of California
School of Public Health
405 Hilgard Avenue
Los Angeles, Calif. 90024-1406
Project Officer: Debbie Callahan
Division of Health Systems and Special Studies

Description: Medicare beneficiaries who are current patients of the University of California, Los Angeles (UCLA) university-based clinic will be targeted for preventive and dental referral services. Approximately 2,100 patients have been randomly assigned to either a treatment or control group. UCLA will also conduct a comprehensive evaluation to assess the cost effectiveness of providing preventive services.

Status: This project is currently in the implementation phase. A detailed implementation protocol was reviewed and approved prior to implementation. During Spring 1989, the first wave of telephone Geriatric Health Risk Appraisals for both treatment and control participants was completed. Many participants have also received services through the Health Promotion Clinic, the major intervention component, which offers screening, assessment, health education, and community referral.

Preventive Health Services for Medicare Beneficiaries

Project No.: 95-C-99159/3-02
Period: May 1988-April 1992
Funding: $ 1,300,000
Award: Cooperative Agreement
Awardee: University of Pittsburgh
Department of Epidemiology
130 Desoto Street
Pittsburgh, Pa. 15261

Project Officer: Sherrie L. Fried
Division of Health Systems and Special Studies

Description: The demonstration will provide preventive services to Medicare beneficiaries residing in rural counties in western Pennsylvania. Potential demonstration participants will receive an in-home health-risk appraisal and then be randomly assigned into two treatment groups and one control group. The treatment groups will include beneficiaries receiving services at clinics and physician offices. The University of Pittsburgh will conduct a comprehensive evaluation to assess the cost effectiveness of providing preventive services.

Status: The implementation phase of the demonstration began in May 1988. A detailed implementation protocol for the demonstration was submitted and approved by the Health Care Financing Administration. The project is continuing to recruit beneficiaries for the demonstration. The baseline interviews are being conducted, and beneficiaries are being randomly assigned into treatment and control groups. Providers have begun delivering the preventive services interventions to beneficiaries enrolled in the treatment group.

Cost Utility of Medicare Reimbursement for Preventive Services in a Health Maintenance Organization

Project No.: 95-C-99161/0-02
Period: May 1988-April 1992
Funding: $ 1,320,000
Award: Cooperative Agreement
Awardee: University of Washington
School of Public Health and Community Medicine
Seattle, Wash. 98195
Project Officer: Sherrie L. Fried
Division of Health Systems and Special Studies

Description: The University of Washington will implement a randomized design to assess the cost savings and changes in health-related quality of life associated with providing a preventive-service package (annual health risk assessment, individual health promotion, and group counseling) for Medicare beneficiaries enrolled in Group Health Cooperative (GHC) of Puget Sound. The project will take place in Seattle, Washington, at four GHC medical centers.

Status: The implementation phase of the demonstration began in May 1988. A detailed implementation protocol for the demonstration was submitted and approved by the Health Care Financing Administration. The project is continuing to recruit beneficiaries for the demonstration. The baseline questionnaire and interview are being conducted, and beneficiaries are being randomly assigned into treatment and control groups. Providers will begin delivering the preventive services interventions to beneficiaries enrolled in the treatment group.

Cross-Cutting Evaluation of Medicare Prevention Demonstrations

Project No.: 500-87-0030
Period: July 1988-April 1992
Funding: $ 299,000
Award: Technical Support: Evaluation of Demonstrations
(See page 80)
Contractor: Abt Associates, Inc.
55 Wheeler Street
Cambridge, Mass. 02138
Task Leader: Bonnie M. Edington
Division of Health Systems and Special Studies

Description: Abt Associates is conducting a cross-cutting evaluation of the five Medicare prevention demonstrations mandated by Public Law 99-272, the Consolidated Omnibus Budget Reconciliation Act of 1985. These demonstrations test the effectiveness of providing disease prevention and health promotion services to Medicare beneficiaries. The waivered services include health screening, health-risk appraisals, immunizations, and counseling/instruction in regard to various life style or behavioral health factors, e.g., smoking, nutrition, and use of medication. In May 1988, the Health Care Financing Administration awarded cooperative agreements to the following five institutions to implement the demonstration:

- Johns Hopkins University, School of Hygiene and Public Health.
- San Diego State University, School of Public Health.
- University of California at Los Angeles, School of Public Health.
- University of Pittsburgh, School of Public Health.
- University of Washington, School of Public Health and Community Medicine.

Status: The demonstration projects were initiated in Spring 1989 and will provide preventive services for 24 months. Abt Associates has been working closely with all the sites to assist implementation efforts, and two all-sites meetings have been held. Abt has developed a minimum data set of a data collection plan. A preliminary Report to Congress was submitted in Summer 1989. An interim report will be prepared midway through the demonstrations. A final report is expected in December 1992.

Study of Medicare Coverage of Influenza Vaccine Demonstration and Evaluation

Project No.: 500-87-0030
Period: July 1988-June 1990
Funding: $ 693,694
Award: Technical Support: Evaluation of Demonstrations
(See page 80)
Contractor: Abt Associates, Inc.
55 Wheeler Street
Cambridge, Mass. 02139

Task Leader: John F. Meitl
Division of Health Systems and Special Studies

Description: Section 4071 of the Omnibus Budget Reconciliation Act of 1987 (Public Law 100-203) mandates a study to determine the cost effectiveness of furnishing an influenza vaccination as a Medicare-covered benefit. To implement this study, the Health Care Financing Administration (HCFA) is working closely with the Centers for Disease Control (CDC). CDC has funded the following demonstration projects with intervention and comparison areas in nine sites: The University of Rochester Medical Center; Michigan Department of Public Health; San Antonio Metropolitan Health District; North Carolina Department of Human Resources; Massachusetts Department of Public Health; Oklahoma State Department of Health; Maricopa County, Arizona Department of Health Services; Ohio Department of Health; and Allegheny County, Pennsylvania Health Department. In addition, statewide projects have been implemented in Indiana, Louisiana, Tennessee, and Virginia, where the carrier treats influenza vaccine as a covered Medicare benefit and reimburses providers for the cost of vaccine and its administration. This contractor will provide assistance to the demonstration sites in implementing the demonstration and in preparing a descriptive evaluation of the demonstration. Abt is involved in ensuring that appropriate data collection activities take place so that the evaluation contractor will be able to conduct the cost-effectiveness analysis.

Status: The nine demonstration sites were awarded during October 1988. The four statewide sites will be operational for the September 1989-March 1990 influenza season. In addition, the Health Care Financing Administration plans to award additional sites to be operational for the 1990-91 influenza season with the same design as the existing nine sites. During the first influenza season, approximately 25,000 claims were processed from the nine sites. It is anticipated that approximately 500,000 claims will be processed from these nine sites during the September 1989-March 1990 influenza season.

Cost-Effectiveness Study of Medicare Coverage of Influenza Vaccine

Project No.: 500-89-0049
Period: September 1989-September 1993
Funding: $ 1,387,471
Award: Contract
Contractor: Abt Associates, Inc.
55 Wheeler Street
Cambridge, Mass. 02138
Project Officer: Edward T. Hutton
Division of Health Systems and Special Studies

Description: Section 4071 of the Omnibus Budget Reconciliation Act of 1987 (Public Law 100-203) mandates a study to determine the cost effectiveness of furnishing influenza vaccination as a Medicare-covered benefit. To implement the study, demonstration projects with intervention and comparison areas have been funded in nine sites. Additionally, four statewide projects have been implemented where the carrier provides influenza vaccine as a covered Medicare benefit and reimburses providers for the cost of vaccine and its administration. The contractor is to evaluate the cost effectiveness of immunizing Medicare Part B recipients against influenza. The evaluation will address: total vaccination expenditures per averted hospitalization and/or death, and comparison of the benefits (expenditures saved) of Medicare influenza vaccine coverage versus the costs (expenditures created).

Status: This project is in the early developmental phase.

The Utilization and Evaluation (Effectiveness and Cost Effectiveness) of Pneumococcal Vaccine in the Medicare Program

Funding: Intramural
Project Officer: Marshall McBean
Division of Beneficiary Studies

Description: Pneumococcal vaccine is recommended by the Immunization Practice Advisory Committee of the Public Health Service for all people 65 years of age or over, and Medicare has reimbursed for this preventive service since July 1981. The national goal is to immunize 60 percent of Medicare beneficiaries by the year 1990. The current immunization level is estimated to be approximately 10 percent. In 1985, Medicare reimbursed for the administration of almost 460,000 doses of vaccine and there were approximately 1,750,000 new Medicare enrollees. Although the vaccine is recommended by the Committee, one randomization control trial published in 1986 and one unpublished study, both done on Veterans Administration beneficiaries, have questioned the effectiveness of the vaccine. The project will describe vaccine utilization as well as the effectiveness and cost effectiveness of the vaccine for Medicare beneficiaries. The project has four major aspects as follows:

- Part 1 will describe the utilization of pneumococcal vaccine in Medicare beneficiaries in 1985 using the Part B Medicare annual data procedure and beneficiary files and the health insurance skeleton eligibility write-off file. The characteristics of immunized and unimmunized beneficiaries will be examined, as well as those of the providers of the vaccine, to identify ways of increasing coverage.
- Part 2 will be a case-control study of the effectiveness and the cost effectiveness of pneumococcal vaccine using all Medicare provider analysis and review reported cases of pneumococcal bacteremia and pneumococcal pneumonia in the United States as the outcome.
- Part 3 will evaluate the effectiveness and cost effectiveness of a pneumococcal vaccine program administered by county health departments in collaboration with the Baltimore County Health Department and the Johns Hopkins Center on Aging.

- Part 4 will evaluate the effectiveness of the proposed statewide pneumococcal vaccine program in the State of Hawaii in reducing morbidity and hospital costs following pneumococcal pneumonia.

Status: Major project activities include:

- Part 1. Data are being obtained from the Health Care Financing Administration data files and being analyzed for 1985, 1986, and 1987.
- Part 2. No further progress.
- Part 3. More than 10,000 Medicare beneficiaries received either pneumococcal vaccine or influenza vaccine in preparation for the 1987-88 and 1988-89 influenza seasons in county-sponsored clinics in Baltimore, Anne Arundel, Carroll, Harford, and Howard counties, Maryland. Approximately 3,000 have received pneumococcal vaccine. The entire population is being followed for hospitalizations caused by various categories of pneumonia.
- Part 4. The State of Hawaii carried out its pneumococcal vaccine immunization program on the island of Oahu and the neighbor islands from September 1, 1988, through February 1989, and administered more than 6,000 doses of vaccine. A case-control study has been initiated to estimate the vaccine's effectiveness using community living Medicare beneficiaries from the island of Oahu who develop pneumonia as cases. A cohort study is also being planned.

Preventive Health Care for Medicaid Children: Relative Factors and Costs

Project No.: 18-C-98897/5-01
Period: October 1986-February 1990
Funding: $ 197,000
Award: Cooperative Agreement
Awardee: American Academy of Pediatrics
144 Northwest Point Boulevard
P.O. Box 927
Elk Grove Village, Ill. 60007
Project Officer: Deidra L. Butts
Division of Program Studies

Description: This project will study preventive care received by children under the Medicaid program. In addition, data from the early and periodic screening, diagnosis, and treatment (EPSDT) program will be used. The study will use two sample groups of children enrolled in the California Medicaid program:

- Children continuously enrolled in Medicaid from 1981 through 1984.
- Children continuously enrolled in Medicaid, at a minimum, during 1981.

Differences in quantities and types of preventive services by client, organizational, and policy variables will be identified. For all children continually enrolled in Medicaid from 1981 through 1984, the impact of different types of preventive services received in 1981 on utilization, costs of care, and some quality measures in 1982, 1983, and 1984 will be studied. The source of Medicaid data will come from the Health Care Financing Administration's Tape-to-Tape project and the State EPSDT system.

Status: This project was funded in October 1986. Computer processing of data from the Medicaid Tape-to-Tape project and EPSDT files has been completed. Analysis of the data is under way. The American Academy of Pediatrics received an extension through February 28, 1990, to complete the project.

Health Care Services for Children Under Medicaid

Project No.: 18-P-98011/3-02S1
Period: August 1981-December 1989
Funding: $ 504,311
Award: Grant
Grantee: The Johns Hopkins University
School of Medicine
Department of Pediatrics
720 Rutland Avenue
Baltimore, Md. 21205
Project Officer: Benson L. Dutton
Division of Reimbursement and Economic Studies

Description: This is a grant for a comparative study of health care services for children by using billing claims and eligibility data files from the State of Maryland. The grantee seeks information on the cost and effectiveness of services for children eligible for the Medicaid early and periodic screening, diagnosis, and treatment program. Data on the costs and utilization of services for children using private practitioners, hospital clinics, emergency rooms, and various combinations of delivery systems serve as the basis of comparison for this analysis.

Status: Using the data files for the Johns Hopkins Hospital Title V Children and Youth Clinic, use of services by Medicaid and self-pay patients has been compared. Within an organized program, utilization differences were small. The implications of these findings were explored, particularly in light of other studies. Services for children with asthma were studied in the Children and Youth Project and in the middle-class population of the Columbia, Maryland Medical Plan. Services were far more numerous, and thus more costly, for the children and youth Medicaid population than for Columbia. The monitoring of Medicaid services, including diagnosis-specific studies for other chronic and acute problems, with cost containment as the goal, will be tested against the large State Medicaid file. A final report is expected mid-1990.

Evaluation of the Omnibus Budget Reconciliation Act of 1987 Medicare Payment for Therapeutic Shoes for Individuals with Severe Diabetic Foot Disease Demonstration

Project No.: 500-87-0028
Period: June 1988-June 1991
Funding: $ 949,642

Award: Technical Support: Evaluation of Demonstrations (See page 80)
Contractor: Mathematica Policy Research, Inc.
P.O. Box 2393
Princeton, N.J. 08543-2393
Task Leader: Sherrie L. Fried
Division of Health Systems and Special Studies

Description: The demonstration will test the cost effectiveness of furnishing therapeutic shoes to Medicare beneficiaries with sever diabetic foot disease. The project is to be conducted for an initial period of 24 months. If the coverage of shoes is found to be cost effective, the demonstration will terminate, and shoes will become a covered service under Medicare. If the findings are inconclusive, the project will continue for an additional 24 months. The demonstration will utilize a randomized design with 13,700 treatment group beneficiaries and an equal number of control group beneficiaries.

Status: An evaluation design and operational protocol were developed by the contractor and approved by the Health Care Financing Administration (HCFA). Site selection was finalized with California, Florida, and New York selected for participation in the demonstration. Notifications of the demonstration were sent to beneficiaries, providers, and suppliers of the therapeutic shoes in the three States. HCFA began offering the therapeutic shoe benefit in August 1989. The Division of Research and Demonstrations Systems Support, HCFA, is serving as the carrier for the study.

Access

Analysis of the Health Care Financing System

Project No.: 500-89-0023
Period: May 1989-February 1990
Funding: $ 229,112
Award: Contract
Contractor: Lewin/ICF
1090 Vermont Avenue, NW.
Suite 700
Washington, D.C. 20005
Project Officer: Gerald F. Riley
Division of Beneficiary Studies

Description: The purpose of the study is to address the August 1988 Presidential Directive from the AIDS (acquired immunodeficiency syndrome) Commission to conduct an analysis of the health care financing system. The study focuses on access to adequate health care by the American public under the current system of health care financing. Attention is paid to private and public-sector-oriented strategies for insuring low-income populations. This includes various proposed expansions of the Medicaid program, as well as mandated employer benefits. Alternatives for the uninsured and underinsured will be developed; the fiscal impacts of these strategies as well as the utility of the strategies for policymaking will be analyzed.

Status: A draft final report is being prepared and will undergo review within the Department of Health and Human Services on completion.

Catastrophic Coverage Studies

Serving Health Information Needs of Elders (SHINE): A Volunteer Approach to Health Benefits Counseling

Project No.: 95-C-99453/1-01
Period: September 1989-August 1992
Funding: $ 1,075,293
Award: Cooperative Agreement
Awardee: Department of Elder Affairs
Commonwealth of Massachusetts
38 Chauncy Street
Boston, Mass. 02111
Project Officer: Ruth B. Pickard
Division of Health Systems and Special Studies

Description: This project is one of two demonstrations being conducted in response to the congressional mandate under Section 424 of the Medicare Catastrophic Coverage Act of 1988 (Public Law 100-360). The Act requires the use of peer volunteers to be trained to counsel those 60 years of age or over regarding their entitlements under Medicare and Medicaid. The public model demonstration will expand a State-directed program which currently encompasses a network of older volunteers operating through 17 municipal-lead Councils on Aging to provide health benefits counseling in 90 communities. During the study, an additional 100 volunteers will be trained and certified to staff centers in 90 more communities. The demonstration will examine the effectiveness of volunteer training, the scope and quality of assistance provided to clients, the effects of stipends on recruitment and retention of volunteers, and the effects of using public-private partnership arrangements in the service delivery. Under subcontract, the Survey Research Center at the University of Massachusetts will conduct a survey of approximately 600 beneficiaries to measure their response to the program.

Status: Design refinements are currently under way. It is expected that the demonstration will be operational early in 1990. The first interim report is expected September 1990.

Medicare/Medicaid Volunteer Counseling Program

Project No.: 95-C-99383/3-01
Period: September 1989-August 1992
Funding: $ 1,800,000
Award: Cooperative Agreement
Awardee: American Association of Retired Persons
P.O. Box 19269-GPCD
Washington, D.C. 20036

Project Officer: Ruth B. Pickard
Division of Health Systems and Special Studies

Description: This project is one of two demonstrations being conducted in response to the congressional mandate under Section 424 of the Medicare Catastrophic Coverage Act of 1988 (Public Law 100-360). The Act requires the use of peer volunteers to be trained to counsel those 60 years of age or over regarding their entitlements under Medicare and Medicaid. The private sector model demonstration will add four new States to an existing network of 110 peer-counseling ventures located in 34 States. In each study State, 150 new volunteer counselors will be recruited. The study purpose is to demonstrate the potential of such arrangements for assisting large numbers of beneficiaries in understanding and prudently utilizing their covered benefits. Both training outcomes and service effectiveness will be examined. Major variables to be tested include:

- The type of ongoing backup support most useful for supplementing initial volunteer training programs.
- The efficacy of providing a small flat-fee reimbursement to enhance recruitment and retention of peer counselors.

Status: Design refinements are currently under way. It is expected that the demonstration will be operational early in 1990. The first interim report is expected September 1990.

Evaluation of Beneficiary Counseling Demonstrations

Project No.: 500-87-0029
Period: September 1989-June 1993
Funding: $ 323,815
Award: Technical Support: Evaluation of Demonstrations
(See page 80)
Contractor: Lewin/ICF
1090 Vermont Avenue, NW., Suite 700
Washington, D.C. 20005
Task Leader: Ruth B. Pickard
Division of Health Systems and Special Studies

Description: This project will conduct an independent evaluation of the two demonstrations being implemented in response to the congressional mandate under Section 424 of the Medicare Catastrophic Coverage Act of 1988 (Public Law 100-360). The demonstrations will be building on currently functioning programs to assess alternative models for training peer volunteers to assist persons 60 years of age or over in understanding and utilizing Medicare and Medicaid benefits. The evaluation will examine the existing program arrangements to create a baseline for longitudinal comparisons, guide the collection of data by the demonstrations so that appropriate cross-cutting analyses may be performed, conduct a limited case study of each demonstration, and analyze the results of each program's training and service performance. In addition, the study will provide a better understanding of the nature and magnitude of beneficiary demand for information about health care entitlements and claims processing.

Status: Initial design work is currently under way. A design report will be presented after the evaluator has reviewed the initial development and operational phases of the two demonstrations.

Subacute and Long-Term Care

Alternative Payment and Delivery

Evaluation of "Life-Continuum of Care" Residential Centers in the United States

Project No.: 18-C-98672/1-03
Period: January 1985-September 1989
Funding: $ 832,871
Award: Cooperative Agreement
Awardee: Hebrew Rehabilitation Center for the Aged
1200 Centre Street
Boston, Mass. 02131
Project Officer: Judith A. Sangl
Division of Long-Term Care Experimentation

Description: The objective of this project is to obtain information about the characteristics of continuum of care residential center (CCRC) facilities and their residents and compare them with elderly residents living in the community, with respect to quality of life and health, service costs, and utilization. Data will be gathered from 20 CCRCs in four areas: Arizona, California, Florida, and Pennsylvania. These sites will be stratified according to the type of contract offered (extended versus limited), the age of the facility, and the income level of those enrolled. Three types of CCRC residents will be selected from the sites for the study sample: new admissions (580), existing residents, both short- and long-stay residents (1,640), and residents who died just prior to or during the field data gathering period (660). Quality of life and service utilization data will be gathered at two points in time, at baseline and 12 months later. Three types of comparison samples will be employed:

- A representative sample of elderly in their own homes or independent apartments (2,422).
- A national sample of elderly living in congregate housing settings (2,350).
- A representative sample of elderly who have died and for whom retrospective data are available for their last year of life (1,500).

Status: The final report is expected by mid-1990.

Design, Implementation, and Evaluation of a Prospective Case-Mix System for Nursing Homes in Massachusetts

Project No.: 11-C-98924/1-01
Period: August 1986-December 1989

Funding: $ 362,312
Award: Cooperative Agreement
Awardee: Massachusetts Department of Public Welfare
Medical Assistance Division
600 Washington Street
Boston, Mass. 02116
Project Officer: Dana B. Burley
Division of Long-Term Care Experimentation

Description: This project designed and implemented a prospective case-mix system for a random sample of nursing homes in Massachusetts. This payment system will test incentives for these nursing homes to admit and treat heavy-care patients while minimizing declines in quality of care. Experimental facilities will be compared with facilities that will continue to be reimbursed under the present system. There are 31 homes participating, 17 in the experimental group. The system modifies four of seven components of the nursing home reimbursement system currently used in the State. For demonstration facilities, nursing services payment is case-mix adjusted using "management minutes." Incentives to admit and treat heavy-care patients are used to further modify the nursing cost center. Various financial incentives also are used to reduce other "controllable" operating costs.

Status: The cooperative agreement was awarded in August 1986. During the first 2 years, project staff finalized aspects of the proposed payment system, assigned volunteer nursing homes to the experimental and control groups, and improved their quality assurance mechanisms. Implementation of the case-mix system began October 3, 1988, for 1 experimental year. Development of quality assurance indicators using this case-mix data base is in progress during the implementation year. The demonstration ends December 31, 1989. Evaluation of the demonstration will begin in January 1990. A final report is expected in late 1990.

Texas Nursing Home Case-Mix Demonstration

Project No.: 11-P-99131/6-02
Period: September 1987-September 1991
Funding: $ 371,873
Award: Grant
Grantee: State of Texas Department of Human Services
P.O. Box 2960 (MC-234-E)
Austin, Tex. 78769
Project Officer: Elizabeth S. Cornelius
Division of Long-Term Care Experimentation

Description: The Texas Department of Human Services will conduct a 3-year demonstration to implement and evaluate a Medicare/Medicaid prospective case-mix payment system. The payment system will be based on the Health Care Financing Administration (HCFA)-sponsored feasibility studies. The major Medicaid objectives of the project are:

- To match payment rates to resident need.
- To promote the admission of heavy-care patients to nursing homes.
- To provide incentives to improve quality of care.
- To improve management practices.
- To demonstrate administrative feasibility of the new system.

The objective for Medicare is to develop and pilot test administrative processes for implementing a Medicare prospective payment system based on a resource-utilization-group system in coordination with Medicaid case-mix systems. The State will use a quasi-experimental design for the Medicare pilot test to compare the effect of introducing case-mix payment in an experimental catchment area versus continuing the cost-based system in a control catchment area. The State will use a pre-post design for the Medicaid system. The case-mix classifications are based on a review of six different systems in which the New York resource utilization groups (RUGs) II explained the greatest variance of staff time. The case-mix indexes borrow major elements of the RUGs II system and some of the rationale from the Minnesota system. The Texas index of level of effort (TILE) uses four clinical groups to form clusters and develops subgroups using an activities-of-daily-living (ADL) scale. The index that will be used for the classification of Medicare patients is the RUG-T18, which uses the same clinical groups and ADL scale as are used in the New York RUGs II system. The difference occurs in the expanded rehabilitation groups for Medicare patients. Two third-party evaluations will be used, one of data reliability and a second of the validity of the data analyses methods.

Status: During the first year, the TILE and RUG-T18 indexes were reviewed for compatibility. The RUG-T18 classification was reviewed and was placed into operation to match the HCFA Medicare coverage guidelines effective April 1988. Cost analysis of both national and State samples of Medicare providers were performed to arrive at baseline costs for calculating the rates for the RUG-T18 groups. The Texas client assessment, review, and evaluation instrument has been reviewed and revised. It was pilot tested in the Austin area and achieved a high reliability score on the case-mix variables. This instrument contains all the ratesetting variables for both Medicare and Medicaid. The Texas utilization review process will expand to include more frequent reviews for new admissions, prior authorization of Medicare stays, and classifications of individual patients into RUG-T18 groups. The Medicaid payment system became operational in April 1989, and the Medicare demonstration is scheduled to become operational in April 1990.

The Multi-State Nursing Home Case-Mix and Quality Demonstration

Project Nos.: Kansas, 11-C-99366/7-01
Maine, 11-C-99363/1-01
Mississippi, 11-C-99362/4-01

South Dakota, 11-C-99367/8-01
Period: June 1989-June 1993
Funding: $ 1,000,000
Award: Cooperative Agreements
Awardees: State Medicaid Agencies
Project Officer: Elizabeth S. Cornelius
Division of Long-Term Care Experimentation

Description: This project builds on past and current initiatives with case-mix payment and quality assurance. The 4-year demonstration will design, implement, and evaluate a combined Medicare and Medicaid system in four States. The purpose of the demonstration is to test a resident information system with variables for classifying residents into homogeneous resource utilization groups for equitable payment and for quality monitoring of outcomes adjusted for case mix. The new minimum data set for resident assessment will be used for both payment classification and quality monitoring systems. This information will be computerized, audited, and submitted as part of the billing documentation. It will be used to develop case-mix adjusted outcome and process norms across the demonstration States. This system, also, will be used to trigger early quality reviews by State staff and provide the regular survey teams with information on potential problems in nursing facilities. The project consists of three phases: systems development and design; systems implementation and monitoring; and evaluation. There will be 18 months of developmental work before the Medicare/Medicaid classification and payment system will be ready for implementation in the demonstration States.

Status: The project is in its early developmental phase. The States have begun work on Phase I activities and will conduct their first data collection in Spring 1990.

Long-Term Care Case-Mix and Quality Technical Design Project

Project No.: 500-89-0046
Period: September 1989-September 1991
Funding: $ 997,887
Award: Contract
Contractor: The Circle, Inc.
8201 Greensboro Drive, Suite 600
McLean, Va. 22102
Project Officer: Elizabeth S. Cornelius
Division of Long-Term Care Experimentation

Description: This 2-year contract will support the design and early implementation phase of the Multi-State Nursing Home Case-Mix and Quality Demonstration. The first step will be to refine the data collection process creating consistent, reliable, and valid measurement of resident characteristics and staff time use across the four demonstration States (Kansas, Maine, Mississippi, and South Dakota). The demonstration will involve approximately 50,000 residents in 800 facilities at any one time. The second step will be to refine a resource utilization group classification system that will apply to both Medicare and Medicaid residents in nursing facilities (skilled nursing facilities and intermediate care facilities) across States. This system will account for more than 42 percent of the staff time variance in each of the several States. It must have natural breaks in the groups between residents who are expected to be short stayers versus long stayers and between residents requiring heavy technical nursing versus residents with less technical needs. A prospective case-mix payment system to be used across the States for Medicare-covered stays will be developed using the common classification system. In addition, analyses comparing outcomes under different circumstances will be conducted. A national advisory group will be tasked to recommend the outcomes that are most promising for use in a quality monitoring system and to assist in the design of the quality monitoring system to be used during the operation phase of the demonstration.

Status: This project is in its early developmental stage.

Longitudinal Study of the Impact of Prospective Reimbursement Under Medicaid on Nursing Home Care in Maine

Project No.: 18-C-98307/1-03
Period: June 1983-June 1987
Funding: $ 541,578
Award: Cooperative Agreement
Awardee: University of Southern Maine
Human Services Development Institute
246 Deering Avenue
Portland, Maine 04102
Project Officer: Judith A. Sangl
Division of Reimbursement and Economic Studies

Description: This project studied the nursing home prospective reimbursement system implemented in Maine. The study provided a longitudinal evaluation of the design and implementation of the system for intermediate care facilities in the State and of the system's effectiveness in achieving the policy goals of containing costs, maintaining or improving quality, and ensuring access to nursing home care by Medicaid recipients. The study consisted of three major components:

- An impact analysis of the effects of prospective reimbursement on costs, quality, and access.
- A case study of the politics of the implementation of prospective reimbursement.
- An analysis of organizational and management response of nursing home administrators to the changes resulting from prospective reimbursement.

The hypotheses of the study were closely tied to the objectives of reimbursement legislation that included incentives for maintaining and increasing a Medicaid patient load. Immediate versus long-term effects of the new system on costs to the State were measured.

Status: Significant study findings include:

- A reduction in total variable costs per patient day of $3.03 by the third payment year occurred, controlling for other factors (e.g., case mix, quality, and facility characteristics).
- Cost efficiencies appeared to be achieved in reducing room and board costs more so than patient care costs despite the lack of policy restrictions on where efficiencies could be achieved.
- A declining interest or ability for homes to operate within their prospectively determined rates was observed by the third payment year.
- No significant impact was apparent on nursing home profitability as captured by operating margin (the ratio of net operating income to total operating revenue).
- Key determinants of nursing home costs included: profit/nonprofit status, bed size, occupancy rate, Medicaid share of patient days, and nursing home bed supply.
- Access to care for Medicaid recipients as captured by the rates of Medicaid days to total patient days declined by 5.5 percent by the third payment year.
- No significant impact on case mix of nursing home residents was observed as measured by this study's primary case-mix variables.
- Key determinants of increased access and more difficult case mix included: nonprofit status, smaller facilities, hospital's affiliation, and facilities in areas with higher bed supplies per population 65 years of age or over.
- No significant impact was observed on structural and outcome quality of care measures developed for this study.
- The process measure of quality of care, nursing hours per patient day, was reduced by almost 15 minutes per patient day by the third payment year. System incentives to increase occupancy without increasing nursing inputs on care appeared to be the significant contributor to this finding.

The final report, "The Impact of Prospective Reimbursement on Nursing Home Costs, Access to Care, and Quality of Care," is available from the National Technical Information Service, accession number PB89-139638.

Analysis of Long-Term Care Payment Systems

Project No.:	18-C-98306/8-04
Period:	April 1983-December 1988
Funding:	$ 1,394,293
Award:	Cooperative Agreement
Awardee:	Center for Health Services Research University of Colorado 1355 South Colorado Boulevard, Suite 706 Denver, Colo. 80222
Project Officer:	Judith A. Sangl Division of Reimbursement and Economic Studies

Description: This project was a comparative analysis of long-term care reimbursement systems in seven States (Colorado, Florida, Maryland, Ohio, Texas, Utah, and West Virginia). The study combined an empirical analysis of nursing home costs and payments and the determinants of costs with a detailed qualitative analysis of the operations of the reimbursement systems. The comparative analysis across States was performed through a unique "comparison-by-substitution" method that calculated reimbursement for nursing homes in one State under the assumption that the other States' reimbursement systems were in effect. Data sources for this study included primary facility information and patient samples, as well as secondary sources such as cost reports.

Status: The final report, consisting of three volumes, has been received and is currently under review:

- Volume I: A Multi-State Analysis of Medicaid Nursing Home Payment Systems.
- Volume II: Administering Nursing Home Case-Mix Reimbursement Systems: Issues of Assessment, Quality, Access, Equity and Cost.
- Volume III: Analyzing Nursing Home Capital Reimbursement Systems.

Additional reports are available from the University of Colorado:

- "Case-Mix Measures and Medicaid Nursing Home Payment-Rate Determination in West Virginia, Ohio, and Maryland," March 1984.
- "Overview of Medicaid Nursing Home Reimbursement Systems," March 1984.
- "Case-Mix and Capital Innovations in Nursing Home Reimbursement," August 1984.
- "An Analysis of Long-Term Care Payment Systems: Research Design," October 1984.
- "The Long-Term Care Policy Environment in Seven States," May 1985.
- "Medicaid and Non-Medicaid Case-Mix Differences in Colorado Nursing Homes," September 1985.
- "Case-Mix Reimbursement for Nursing Home Services: A Three-State Simulation Model," October 1985.
- "Case Mix in Connecticut Nursing Homes: Medicaid Versus Non-Medicaid, Profit Versus Non-Profit, and Urban Versus Rural Patient Groups," December 1985.
- "Analyzing Nursing Home Profits," May 1986.
- "Case-Mix Reimbursement for Colorado Nursing Homes."

Modifications of the Texas System of Care for the Elderly: Alternatives to the Institutionalized Aged

Project No.:	11-P-97473/6-10
Period:	January 1980-December 1989
Award:	Grant
Grantee:	Texas Department of Human Resources 701 West 51st Street P.O. Box 2960 Austin, Tex. 78769
Project Officer:	Phyllis A. Nagy Division of Long-Term Care Experimentation

Description: The purpose of this project is to reduce the growth of nursing homes in Texas and, at the same time, expand access to community care services for needy Medicaid individuals. It is being accomplished by directly changing the operating policies of the States's Title XIX and Title XX programs, specifically, by eliminating the State's lowest level of institutional care, intermediate care facility II (ICF-II). Existing organizations responsible for the State's Title XIX and Title XX programs are responsible for project implementation.

Status: Substantial progress has been made in achieving project objectives. In March 1980, there were 15,486 individuals in the ICF-II group. As of December 1988, there were 506 ICF-II clients remaining. From March 1980 to December 1988, the total institutional population decreased from 64,820 to 54,365 clients (a reduction of 16.1 percent), while the community care population increased from 30,792 to 46,958—an increase of 52.5 percent. A final report is expected in mid-1990.

New Jersey Respite Care Pilot Project

Project No.: 11-P-99333/2-02
Period: July 1988-September 1990
Award: Grant
Grantee: New Jersey Department of Human Services
222 South Warren Street
Trenton, N.J. 08625
Project Officer: Dennis M. Nugent
Division of Long-Term Care Experimentation

Description: For many families, caring for an elderly or chronically disabled member can be both physically and emotionally demanding. Respite care provides temporary relief to caregivers, allowing them to continue in that role for a longer period of time. A provision in the Omnibus Budget Reconciliation Act of 1986 established the New Jersey Respite Care Pilot Project to assist families with the care of elderly or functionally impaired individuals at risk of institutional placement. This project was developed to examine the effect of respite services on both caregivers and care-recipients. The purpose of the study is to determine to what extent respite care services enhance or sustain the role of the family in providing long-term care, and whether these services postpone or avert the need for institutional placement. Respite care services under this project include: homemaker, home health aide, and personal care services; short-term and intermittent companion services; adult day care; and inpatient respite in a hospital or nursing home. Peer support, training, and counseling are provided to family caregivers.

Status: New Jersey did not submit an application after the passage of the 1986 authorizing legislation because a provision requiring all clients to be Medicaid-eligible was inconsistent with the State's implementation plan. Under the program originally developed by the State, respite care services were to be provided to a non-Medicaid population whose individual income was less than 300 percent of the income level for eligibility for Supplemental Security Income. Since the legislation had failed to include this category of individuals, the State was unable to proceed with the study. Section 4118 of Public Law 100-203 amended the project's eligibility criteria by eliminating the Medicaid requirement. The project began on July 1, 1988. All of New Jersey's 21 counties are participating in this program. During its first year, respite care services were provided to more than 1,000 elderly or disabled clients and their families. In compliance with one of the requirements of the legislation, the State has arranged for an independent evaluation of the project to be conducted by the Center for Health Policy and Aging Research at Rutgers University. The final report is expected in early 1991.

Study of Adult Daycare Services

Project No.: 500-89-0024
Period: June 1989-January 1990
Funding: $ 93,750
Award: Contract
Contractor: Institute for Health and Aging
University of California, San Francisco
3733 California St.
San Francisco, Calif. 94143
Project Officer: Donald Sherwood
Division of Long-Term Care Experimentation

Description: Section 208 of the Medicare Catastrophic Coverage Act of 1988 (Public Law 100-360) mandates an updated survey of adult day centers. The legislation requests that this survey provide information on:

- Who is served by adult day centers?
- How many centers are there and where are they located?
- What services do they provide?
- What are the characteristics of operating these centers?
- Who now funds these centers?
- What is the cost of operating these centers?
- Are there licensing, certification, and quality assurance standards governing these centers?
- How do these characteristics vary by State?

The legislation calls for two reports, a descriptive report on the centers and the clients they serve, and a policy paper making recommendations regarding Medicare funding of adult day centers. An initial 1985 survey was performed by the National Institute of Adult Daycare (NIAD), a constituent unit of the National Council on the Aging, with the assistance of a few adult day center consultants. The legislation requests that these same individuals complete this survey (i.e., consultants now residing at the University of California at San Francisco and NIAD).

Status: Funding for the survey was obtained from the American Association for Retired Persons. All the known and designated adult day centers in the United States were mailed a survey during February 1989. A contract was awarded to the University of

California at San Francisco to perform the analyses of the survey data. Both congressional reports are anticipated by mid-1990.

On Lok's Risk-Based Community Care Organization for Dependent Adults

Project Nos.: 95-P-98246/9-05;
11-P-98334/9-05
Period: November 1983-Indefinitely
Award: Grants
Grantees: On Lok Senior Health Services
1441 Powell Street
San Francisco, Calif. 94133

California Department of Health Services
714-744 P Street
Sacramento, Calif. 95814
Project Officer: Donald Sherwood
Division of Long-Term Care Experimentation

Description: In response to the congressional mandate of Section 603(c)(1) and (2) of Public Law 98-21, the Social Security Amendments of 1983, the Health Care Financing Administration granted Medicare waivers to On Lok Senior Health Services and Medicaid waivers to the California Department of Health Services. Together, these waivers permitted On Lok to implement an at-risk, capitated payment demonstration in which more than 300 frail elderly persons, certified by the Department of Health Services for institutionalization in a skilled nursing facility, are provided a comprehensive array of health and health-related services in the community. The current demonstration maintains On Lok's comprehensive community-based program but has modified its financial base and reimbursement mechanism. All services are paid for by a predetermined capitated rate from both Medicare and Medicaid (Medi-Cal). The Medicare rate is based on the average per capita cost for the San Francisco county Medicare population. The Medi-Cal rate is based on the State's computation of current costs for similar Medi-Cal recipients using the formula for prepaid health plans. Individual participants may be required to make copayments, spend down income, or divest assets, based on their financial status and eligibility for either or both of the programs. On Lok has accepted total risk beyond the capitated rates of both Medicare and Medi-Cal with the exception of the Medicare payment for end stage renal disease. The demonstration provides service funding only under the waivers. The research and development activities are funded through private foundations.

Status: Section 9220 of the Consolidated Omnibus Budget Reconciliation Act of 1985 has extended On Lok's Risk-Based Community Care Organization for Dependent Adults indefinitely, subject to the terms and conditions in effect as of July 1, 1985, except that requirements relating to data collection and evaluation do not apply.

Program for All-Inclusive Care for the Elderly (On Lok) Case Study

Project No.: 99-C-99169/5-02
Period: August 1989-January 1991
Funding: $ 172,138
Award: Cooperative Agreement
Awardee: University of Minnesota Policy Center
(See page 79)
Task Leader: William D. Clark
Division of Long-Term Care Experimentation

Description: This study will provide a descriptive analysis of the early stages of the Program for All-inclusive Care for the Elderly (PACE) demonstration. The study will be a detailed examination of the model of service delivery provided by On Lok Senior Health Services, San Francisco, California, and the degree to which aspects of this model are successfully replicated in as many as eight sites nationwide. The results of the study are expected to have utility as subsequent sites are developed for later implementation.

Status: The study is in the initial design phase. Initial site visits to On Lok and PACE sites are under way.

Capitation Reimbursement for Frail Elderly

Project No.: 99-C-98526/1-06
Period: August 1988-July 1990
Funding: $ 74,392
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: William D. Clark
Division of Long-Term Care Experimentation

Description: This project involves examining data on Medicaid nursing home certifiable beneficiaries as a means to analyze and refine the capitated reimbursement methodology being implemented in the congressionally mandated program for all-inclusive care for the elderly (PACE) demonstration. The PACE demonstration will attempt to replicate the model developed by On Lok Senior Health Services in San Francisco, California.

Status: A draft final report, "Capitation Rates for the Frail Elderly," has been received and is currently under review. The report provides an analysis of the Medicare capitation rate factors used by On Lok and the PACE sites. The analysis used data from the Social Health Maintenance Organization Demonstration and the National Long-Term Care Surveys for 1982 and 1984.

Arizona Health Care Cost-Containment System

Project No.: 11-P-98239/9-07
Period: June 1982-September 1993
Award: Grant

Grantee: Arizona Health Care
Cost-Containment System Administration
801 East Jefferson
Phoenix, Ariz. 85034
Project Officer: Sidney Trieger
Division of Health Systems and Special Studies

Description: This project is designed to test the effectiveness of establishing under the Social Security Act, Title XIX, a Medicaid program based on competitive principles, including primary care physicians acting as gatekeepers, prepaid capitated contracts, competitive bidding, the use of nominal copayments, limited restrictions on freedom of choice, and capitated payment by the Health Care Financing Administration (HCFA). Although acute services continue to be provided by health plans, long-term care (LTC) services are provided through capitated contracts by the State with the two largest Arizona counties and two LTC contractors. The major features of the Arizona Long-Term Care System (ALTCS) are:

- County and State governments share the burden for financing the non-Federal portion of the program.
- The State is at limited financial risk for service provided to the developmentally disabled (DD) and elderly and physically disabled (EPD) through prospective payments received from the Federal Government.
- By 1992, the State will be at full risk for both the EPD and the DD through capitation payments by HCFA.
- Program contractors are at financial risk for providing services through prepaid capitation payments made by the State.
- Prevention of member dumping and promotion of cost effectiveness are accomplished by bundling LTC and acute care services into one capitation rate.
- Clients at risk of institutionalization are treated in the least restrictive, most cost-effective manner by providing them with a full continuum of LTC services from skilled nursing home care to home care. Home and community-based expenditures cannot exceed 5 percent of total LTC cost for the EPD population. There is no such limit for the DD population.
- LTC services are procured through competitive bidding and selective contracting.
- Strong program controls are employed, including a stringent preadmission screening program, case management, quality assurance, quality control, uniform accounting and reporting, and auditing.

Status: The Arizona Health Care Cost-Containment System (AHCCCS) began operating October 1, 1982, and is currently in its eighth year of operation. In December 1988, the ALTCS was created, as an addition to the AHCCCS demonstration, which previously had covered only acute care. The ALTCS component was approved as part of a 5-year extension of the AHCCCS demonstration, from October 1, 1988 through September 30, 1993.

Evaluation of the Arizona Health Care Cost-Containment System

Project No.: 500-83-0027
Period: June 1983-January 1989
Funding: $ 4,017,610
Award: Contract
Contractor: SRI International, Inc.
33 Ravenswood Avenue
Menlo Park, Calif. 94025
Project Officer: William L. England
Division of Health Systems and Special Studies

Description: This project involved evaluating the implementation, operation, and impact of the Arizona Health Care Cost-Containment System (AHCCCS), a unique and innovative State-sponsored demonstration that provides public assistance medical care to residents of Arizona who are eligible for Aid to Families with Dependent Children and Supplemental Security Income cash payments. The study focused on measuring the effects of AHCCCS on cost, quality, and utilization of health care as well as issues related to patient access and satisfaction. The following major innovative cost-containment methods were evaluated:

- Capitation prepayment contracts, awarded as a result of competitive bidding, to health care plans that provide or arrange for the provision of covered services.
- "Gatekeeping" by a primary care physician who is responsible for either providing or authorizing the services to be reimbursed for the enrollees, including any services provided by specialists.
- Use of nominal copayments as a means of inhibiting unnecessary utilization.
- Restriction on freedom of choice of plans and providers.
- Capitated payment of Federal financial participation by the Health Care Financing Administration to the State of Arizona based on the number of enrollees.

Status: A complete list and description of the reports prepared by SRI during this evaluation, as well as the accession numbers and costs necessary to order the reports from the National Technical Information Service, was published in the *Health Care Financing Review*, Vol. 10, No. 4, pages 148-50, Summer 1989. These reports included:

- A literature review on the major study topics and the methodologies for their evaluation.
- An evaluation plan that details the issues to be addressed by the study and the methodological approaches to be utilized.
- Four case studies that describe the events that occurred during the first 5 years of the AHCCCS program operation.
- Three reports on the cost of AHCCCS covering the first 3 years of the program compared with the cost of traditional Medicaid programs.
- A report on the access to care and satisfaction of beneficiaries served by the AHCCCS program.

- A report on quality of care in AHCCCS compared with traditional Medicaid programs.
- A report on the utilization of medical care services in AHCCCS.
- A final report.

Project No.: 500-89-0067
Period: September 1989-September 1993
Funding: $ 3,299,119
Award: Contract
Contractor: Laguna Research Associates
1803 Laguna Street
San Francisco, Calif. 94115
Project Officer: William L. England
Division of Health Systems and Special Studies

Description: This project will evaluate the continuing operating of the Arizona Health Care Cost-Containment System (AHCCCS), with particular emphasis on the implementation and operation of the Arizona Long-Term Care System (ALTCS), a new component of AHCCCS which began in December 1988. AHCCCS is a unique, State-sponsored capitation demonstration that provides public assistance medical care to residents of Arizona who are eligible for Aid to Families with Dependent Children and Supplemental Security Income cash payments. Major research questions to be investigated include:

- Does combining long-term care (LTC) and acute care services into one payment to local program contractors result in improved LTC and reduce acute care services?
- Does competitive bidding and selective contracting result in lower per unit LTC service cost?
- How effective is the preadmission screening (PAS) instrument used by ALTCS in identifying individuals who are at risk of institutionalization?
- Can home and community-based (HCB) services be substituted for long-term institutional care for individuals who pass the PAS, and are those HCB services less expensive than institutional care?
- Does case management of LTC services result in lower cost and better coordination of care?
- What are the effects of capitating LTC services?
- Is the ALTCS more cost effective than a comparable State's fee-for-service LTC program?

Status: This evaluation is in the early developmental phase.

Feasibility Analysis for Pathways to Long-Term Care Project

Project No.: 99-C-98526/1-06
Period: August 1989-November 1989
Funding: $ 19,994
Award: Cooperative Agreement
Awardee: Brandeis University Policy Center
(See page 78)
Task Leader: William D. Clark
Division of Long-Term Care Experimentation

Description: This study will determine the feasibility of analyzing social health maintenance organization data on service use that tracks individuals as they make a transition from a state of health to one of severe impairment. If a sufficient amount of data is available, subsequent analysis may be approved with additional funds to determine whether definable "pathways" could be derived. These pathways to long-term care could assist in case management practice and provide outcome-related information regarding the use of long-term care services in managed-care setting.

Status: The feasibility study is expected to be completed by early 1990.

Home Health Agency Prospective Payment Demonstration

Project No.: 500-84-0021
Period: December 1983-December 1989
Funding: $ 2,839,501
Award: Contract
Contractor: Abt Associates, Inc.
1055 Thomas Jefferson Street, NW.
Washington, D.C. 20007
Project Officer: Marilyn J. Vranas
Division of Long-Term Care Experimentation

Description: The purpose of this project is to develop and test alternative methods of paying home health agencies on a prospective basis for services furnished under the Medicare program. The demonstration will enable the Health Care Financing Administration (HCFA) to evaluate the effects of various methods of prospective payment on health care expenditures, quality of home health care, and home health agency (HHA) operations.

Status: A contract was awarded in December 1983 to Abt Associates for development and implementation of the demonstration. In response to Section 4027 of the Omnibus Budget Reconciliation Act of 1987 (Public Law 100-203), which directs HCFA to conduct a demonstration of prospective payment for HHAs, Abt is working with HCFA to develop an updated project design and to assist HCFA in implementing the demonstration. At this time, HCFA and Abt are finalizing details of the proposed design. As part of this effort, Abt has performed an analysis of the HHA plan of treatment, claim, and cost report data to provide HCFA with information about length of home health episodes and the relationship between patient characteristics and resource use. The operational phase of the demonstration is expected to begin in mid-1990. The demonstration will test two prospective payment approaches—payments per visit by type of discipline

and payments per episode of Medicare-covered home health care. Each HHA's payment rates will be based on its own Medicare allowable costs in the 12-month period prior to the HHA entering the demonstration. The study design calls for recruitment of 100 HHAs from five States (California, Florida, Illinois, Massachusetts, and Texas) to participate voluntarily in the demonstration. HHAs that agree to participate in the demonstration will be randomly assigned to one of three groups (i.e., to one of the two payment methods or to a control group that continues to be reimbursed in accordance with the current retrospective cost system). To assure that the incentives of prospective payment do not lead to reductions in the quality of home health care or in access to necessary and appropriate services, peer review organizations in the five demonstration States will conduct ongoing quality assurance reviews of a sample of patient records from the participating HHAs. HCFA will solicit proposals and award a contract to evaluate the demonstration in 1990.

Develop and Demonstrate a Method for Classifying Home Health Patients to Predict Resource Requirements and to Measure Outcomes

Project No.: 18-C-98983/3-02
Period: June 1987-June 1990
Funding: $ 968,332
Award: Cooperative Agreement
Awardee: Georgetown University
Georgetown School of Nursing
3700 Reservoir Road, NW.
Washington, D.C. 20007
Project Officer: Margaret A. Coopey
Division of Long-Term Care Experimentation

Description: The purpose of the project is to develop a method for classifying patients that will predict resource requirements and measure outcomes of Medicare patients in certified home health agencies (HHAs). An abstract form from a previous pilot study conducted by Georgetown was revised and further tested in abstracting data retrospectively from 1,000 HHA patients in a selected sample of 10 agencies. The results were then reviewed to refine the abstract form and ensure that all relevant indicators of resource requirements and outcome measures were incorporated into an abstract that was used to collect data from the home health records of approximately 9,000 recently discharged Medicare patients. The records were drawn from a national sample of approximately 600 certified HHAs, stratified by size, ownership, and geographic location. The data will be analyzed, using multivariate statistical techniques to determine which variables are most predictive of resource requirements. The identified relevant variables will then be incorporated into an assessment tool and a case-mix classification tool that categorizes patients according to predicted resource requirements. A data base of participating HHA and Medicare patient characteristics will also be produced.

Status: The collected data are being analyzed. The final report is expected by late 1990.

Long-Term Care Populations

Long-Term Care of Aged Individuals With Hip Fractures: Public Versus Private Costs

Project No.: 18-C-98393/3-03
Period: September 1983-September 1988
Funding: $ 711,793
Award: Cooperative Agreement
Awardee: University of Maryland Medical School
655 West Baltimore Street
Baltimore, Md. 21201
Project Officer: Judith A. Sangl
Division of Reimbursement and Economic Studies

Description: This study examined the complex economic and psychosocial determinants of the public and private contribution to the long-term care of a group of aged individuals who suddenly became disabled by hip fractures. The impact of family size and composition, social support, family economic resources, and the aged individuals' physical and mental health were analyzed in terms of the decisions to enter a nursing home or return home. Study data came from 858 patients from seven hospitals in the Baltimore, Maryland area.

Status: Some of the major study findings were as follows:

- *Use of nursing home care.* Patients admitted to nursing homes following discharge from the hospital for a hip fracture tended to: come from households with a larger portion of members who were working, were male, and had claimed poor or fair health; be protestant, older, and white; come from higher income families; have poorer capacity to perform instrumental activities of daily living; live in residences that had stairs to climb; and receive less caretaking from family members and friends during the 2 months following hospital discharge for the fracture.
- *Use of paid home care aides.* Patients who used the services of paid home care providers were more likely to: be better educated; have more disposable monthly incomes; live alone; and have many sisters and daughters who headed large households and who resided within 5 miles of the patients' residences. Prior to the fracture, patients receiving assistance from paid home aides tended to get support for a wide range of activities including emotional support, indoor and outdoor mobility, and arrangements for services and medical supervision. After the fracture, the range of supported activities narrowed. The activities receiving the greatest support were personal and domestic care needs and physical therapy.
- *Substitutability of nursing home care, caregiving, and paid home aides.* Patients who relied more on caregiving and paid assistance tended to have

substantially shorter nursing home stays. On average, during the 2 months following patients' discharges from the hospital, patients who received an additional 12 minutes per week of caregiving time or an additional 7 minutes per week of paid assistance spent 1 less day in a nursing home during the 2 months following discharge.

- *Financial support.* Prior to the fracture, most patients received modest financial support from family and friends to help pay the cost of medical care services. This support dramatically increased during the 2 months following patients' discharges from the hospital. However, this support returned to pre-fracture levels within 6 months following hospital discharge. For example, families and friends contributed a modest 2 percent to the cost of paid home aides prior to the fracture. Actual dollar support increased dramatically by sixfold during the 2 months following patients' discharges from the hospital, then returned to pre-fracture levels after 6 months. After the fracture, family and friends contributed a modest 5 percent of the costs for nursing home care at 2 months and 2 percent after 6 months following patients' discharges from the hospital.

Massachusetts Health Care Panel Study of Elderly: Wave IV

Project No.: 18-C-98592/1-02
Period: July 1984-January 1990
Funding: $ 152,408
Award: Cooperative Agreement
Awardee: Harvard University/
Harvard Medical School
1350 Massachusetts Avenue
Holyoke Center 458
Cambridge, Mass. 02138
Project Officer: Marni J. Hall
Division of Long-Term Care Experimentation

Description: This project collected the fourth wave of self-reported information from the Massachusetts Health Care Panel Study cohort, a group that was selected 10 years ago as a statewide probability sample of all persons 65 years of age or over. The data from the first three waves were analyzed and the results have been reported in numerous articles in professional journals. In this project, the data from all four waves are being analyzed to determine markers of functional decline during pre-death, predictors of long-term care institutionalization, and interrelationships between physical, behavioral, and social characteristics and subsequent health care and social service utilization and mortality.

Status: Data for this project have been gathered. An analysis is under way, and a final report is expected in mid-1990.

A National and Cross-National Study of Long-Term Care Populations

Project No.: 18-C-98641/4-03
Period: September 1984-June 1990
Funding: $ 1,016,587
Award: Cooperative Agreement
Awardee: Duke University
Center for Demographic Studies
2117 Campus Drive
Durham, N.C. 27706
Project Officer: Herbert A. Silverman
Division of Program Studies

Description: Based on data from the 1982 and 1984 National Long-Term Care Surveys, this project will forecast the size and the socioeconomic characteristics, health status, and cognitive and physical functioning capacities of the aged population in the United States into the middle of the 21st century. These projections are being compared with similar information from other countries. The findings will be useful for planning long-term care programs for functionally impaired aged persons. The project has been expanded to conduct additional analyses on:

- Identifying clusters of characteristics that distinguish groups of functionally impaired aged persons living in the community and are associated with differential patterns of use and expenditures of home health care services.
- Comparing hospital and post-hospital experiences of persons in the 1982 and 1984 National Long-Term Care Surveys and relating them to changes in their functional and health status in the interim. As an extension of this analysis, ascertaining whether there have been substitutions for different types of services over time in light of the patients' changed health and functional status. For example, are home health services used more in lieu of nursing home services?
- Describing and comparing out-of-pocket health care expenses relative to aged persons' health status, functional and cognitive disabilities, and access to informal caregiving services.
- Examining the impact of institutionalization and the medical expenses incurred prior to and after institutional placement on the spouse who is not institutionalized. This analysis will include the impact of one spouse's institutionalization on the other spouse's economic, residential, health, and functional status as well as the Medicaid spend-down process as experienced by the noninstitutionalized spouse.
- Refining the calibration of the underwriting factors used in computing the adjusted average per capita cost for establishing the capitation rates for aged Medicare enrollees joining health maintenance organizations and other prepayment plans. This will include combining detailed data on the functional and socioeconomic characteristics of the aged population from the 1982 and 1984 National Long-Term Care

Surveys with Medicare utilization and expenditure data.
- Converting the data tape from the 1984 National Long-Term Care Survey to a format suitable for public distribution.
- Estimating what the Medicare expenditures would have been in 1982 and 1984 had the provisions of the Medicare Catastrophic Coverage Act of 1988 (MCCA) been in effect. (This was added to the project's scope of work in January 1989.)

Status: Public use data tapes from the 1982 and 1984 National Long-Term Care Surveys are available from the National Technical Information Service. There are three parts to the package, and each may be purchased separately:

- The documentation for the data tapes is available in paper copy or microfiche. The accession number is PB88-172267.
- The data from the 1982 and 1984 Surveys are available in two separate tapes. One contains data on persons interviewed in 1982 and 1984. This provides the longitudinal perspective on persons in the Surveys. The second contains data on all persons participating in the 1984 Survey. This includes data on aged persons who became Medicare beneficiaries after the 1982 Survey was conducted. This provides a cross-sectional perspective on functionally impaired aged Medicare beneficiaries in 1984. The 1984 data on persons in nursing homes are more complete than the data obtained in 1982. The accession number is PB88-172242.
- Medicare Part A bill data for services received between 1978 and 1985 by persons participating in the Surveys constitute the third tape. The coding scheme permits person-level linkage of the bill file to persons participating in the Surveys. The accession number is PB88-172259.

Technical assistance to persons purchasing the public use tapes is available from the staff at Duke University. The provision of this service is funded under this agreement. A report has been submitted covering all the tasks described except for the modification added in January 1989: estimating what the impact of MCCA would have been on Medicare expenditures had the provisions been in effect in 1982 and 1984. The report, bearing the title of this project, is available from the National Information Service, accession number PB89-190342. Among the salient findings of this report were:

- The number of elderly persons in the United States who might need long-term care services in the community or in institutions because of impairments in the activities of daily living is expected to increase from about 6.8 million in 1985 to 19.0 million in 2040.
- Given optimistic assumptions about continuing decreases in the mortality rate, the number of elderly persons with functional impairments in the activities of daily living could be as great as 23.6 million by 2060.
- These estimates could be significantly affected by prevention or improved treatment of disabling conditions, such as arthritis. A 50-percent reduction in the prevalence of arthritis would, by 2040, reduce the number of persons with arthritis 1.5 million below current projections.

The report points out that diseases for which we know the most about risk factors and control, such as heart diseases, stroke, and cancer, are lethal diseases that produce relatively little long-term disability. In contrast, the diseases that are not as well studied and for which we have fewer effective controls, such as dementia, osteoporosis, rheumatoid arthritis, and osteoarthritis, are chronic degenerative diseases that produce the most long-term disability. Thus, without considerable new research on these other disabling diseases, total life expectancy is likely to increase more rapidly than disability-free life expectancy. This will tend to increase the prevalence of disability and the need for long-term care services.

Analysis of State Systems for Providing Intermediate Care Facility for the Mentally Retarded and Other Care for the Mentally Retarded

Project No.: 18-C-99074/5-01
Period: June 1987-May 1989
Funding: $ 88,268
Award: Cooperative Agreement
Awardee: Center for Residential and Community Services
University of Minnesota
6 Pattee Hall
150 Pillsbury Drive, SE.
Minneapolis, Minn. 55455
Project Officer: Marni J. Hall
Division of Long-Term Care Experimentation

Description: This project updated information on the status and changes in residential services for the mentally retarded gathered by this awardee for 1977 and 1982 in a previous Health Care Financing Administration-funded grant. Data on the current status of the intermediate care facility for the mentally retarded (ICF/MR) program, which were obtained through the Inventory of Long-Term Care Places, the sampling frame for the institutional component of the National Medical Expenditures Survey, were analyzed and supplemented by case studies of selected State programs for serving the mentally retarded.

Status: Data from the tape of the Inventory of Long-Term Care Places were analyzed, and indepth State studies were conducted. A final report entitled "Medicaid Services for Persons with Mental Retardation and Related Conditions" was received in May 1989 and is available from the National Technical Information Service, accession number PB90-114364. Study results showed that community-based services have become the primary model of care for persons with mental

retardation and related conditions. Conversely, the ICF/MR program has shown little growth in the recent past and the numbers of persons served by this program have decreased in a majority of States. These facts, as well as the wide acceptance of home and community-based services waivers, indicate the need to begin viewing the services system for persons with mental retardation as a community-based, rather than an institutionally based system.

The Development of Long-Term Care Reform Strategy for New York's Office of Mental Retardation and Developmental Disabilities

Project No.: 11-C-99309/2-02
Period: June 1988-June 1990
Funding: $ 115,581
Award: Cooperative Agreement
Awardee: New York State Department of Social Services
Division of Medical Assistance
40 North Pearl Street
Albany, N.Y. 12243
Project Officer: Nancy A. Miller
Division of Long-Term Care Experimentation

Description: The New York Office of Mental Retardation and Developmental Disabilities is conducting a 2-year project to develop a comprehensive plan and waiver application that would reform the financing, regulation, and service delivery of the mentally retarded and developmentally disabled system in three districts that cover eight New York counties. The State considers the demonstration as the first step toward statewide implementation. The objectives are to:

- Develop a financing system that will improve services to this population by expanding the number and types of people to be served and the types of services to be provided.
- Change the manner in which quality of care is assured.
- Constrain growth in Federal expenditures for these services.

Waivers would alter the Medicaid basis of payment, revise the State Medicaid plan requirements, change how Medicaid funds can be used, and implement revised quality assurance regulations. The demonstration will test an alternative financing approach that approximates recently formulated departmental policy directions as developed by the Department of Health and Human Services working group on intermediate care facilities for the mentally retarded. The project represents a major test of reform in the delivery of services for persons who are developmentally disabled.

Status: Both national and State-level advisory panels have been convened, and the development of issue papers is under way.

Community Care for Alzheimer's and Related Diseases

Project No.: 18-P-99020/3-02
Period: June 1987-December 1989
Funding: $ 127,970
Award: Grant
Grantee: The Urban Institute
Health Policy Center
2100 M Street, NW.
Washington, D.C. 20037
Project Officer: Donald Sherwood
Division of Long-Term Care Experimentation

Description: The Urban Institute will analyze data from the National Long-Term Care Channeling Demonstration (1982-84) to determine the range of services, sources, and costs of care used by community residents with cognitive impairment and to determine the risks of their entering nursing homes, as a function of physical and mental health status, and the types and amounts of care received in the community. The study is expected to provide baseline information for the Medicare Alzheimer's Disease Demonstration that is congressionally mandated in Section 9342 of the Omnibus Budget Reconciliation Act of 1986.

Status: Analyses of several cost centers for community care and risks of nursing home admissions currently are being carried out. In addition, the Health Care Financing Administration has approved an additional task that permits an assessment of the feasibility of using a longitudinal data base from the Triage/Connecticut Community Care, Inc. This data base contains details on patient assessment and management systems that may provide additional information on the costs of persons with Alzheimer's and related diseases.

Evaluation Design for Medicare Alzheimer's Disease Demonstration

Project No.: 500-87-0028
Period: October 1987-July 1989
Funding: $ 428,786
Award: Technical Support: Evaluation of Demonstrations
(See page 80)
Contractor: Mathematica Policy Research, Inc.
P.O. Box 2393
Princeton, N.J. 08543
Task Leader: Dennis M. Nugent
Division of Long-Term Care Experimentation

Description: Section 9342 of Public Law 99-509, the Omnibus Budget Reconciliation Act of 1986, requires the Secretary of Health and Human Services to conduct at least 5 (and not more than 10) demonstration projects to determine the effectiveness, cost, and impact of

providing comprehensive services to Medicare beneficiaries who are victims of Alzheimer's disease or related disorders. The legislation specifies that the project shall be conducted over a period of 3 years, and that sites must be geographically diverse, located in States with a high proportion of Medicare beneficiaries, and in areas readily accessible to a significant number of beneficiaries. The services to be provided under the demonstration may include: case management; home and community-based services such as adult day care and personal care services; and education, counseling, and other supportive services for the primary informal caregiver (the family member who provides most of the care) of the Alzheimer's patient. In 1987, a contract was awarded to Mathematica Policy Research, Inc. to assist the Health Care Financing Administration (HCFA) in designing and implementing the demonstration. The proposed design calls for testing of alternative models that involve variations in the type and amount of services covered or the levels of Medicare reimbursement and the intensity of case management.

Status: The following demonstration sites were selected through a competitive process in 1988:

Monroe County Long Term Care Program, Inc.
Rochester, New York

Carle Clinic
Urbana, Illinois

Northeast Community Mental Health Center
Memphis, Tennessee

Good Samaritan Hospital and Medical Center
Portland, Oregon

Cincinnati Area Senior Services, Inc.
Cincinnati, Ohio

Wood County Senior Citizens Association, Inc.
Parkersburg, West Virginia

The Wilder Foundation
Minneapolis, Minnesota

Miami Jewish Home and Hospital
Miami, Florida

After an initial planning phase that began in May 1989, the demonstration sites will begin furnishing services to clients in late 1989. HCFA awarded a contract in September 1989 to the University of California at San Francisco to conduct an independent evaluation of the demonstration.

Evaluation and Technical Assistance of the Medicare Alzheimer's Disease Demonstration

Project No.: 500-89-0069
Period: September 1989-September 1993
Funding: $ 1,999,812
Award: Contract
Contractor: Institute for Health and Aging
University of California, San Francisco
210 Filbert Street
San Francisco, Calif. 94133
Project Officer: Dennis M. Nugent
Division of Long-Term Care Experimentation

Description: The Medicare Alzheimer's Disease Demonstration, authorized by Congress under Public Law 99-509, Section 9342, the Omnibus Budget Reconciliation Act of 1986, will determine the effectiveness, cost, and impact on health status and functioning of providing comprehensive services to beneficiaries who have dementia. Two models of care are being studied under this project. Both provide case management, homemaker/personal care services, adult day care, and education and counseling for family caregivers. Case management activities include assessment, care planning, service arrangement, and patient monitoring. The two models vary by their monthly expenditure caps and the intensity of their case management. Eight sites are participating in this demonstration.

Status: The planning phase of this 3-year demonstration began May 15, 1989. The project's evaluation and technical assistance contract was awarded on September 30, 1989.

An Exploratory Study of the Economic Consequences of Acquired Immunodeficiency Syndrome and AIDS-Related Complex for the Medicare and Medicaid Programs

Project No.: 18-C-99141/3-01
Period: July 1987-December 1988
Funding: $ 239,957
Award: Cooperative Agreement
Awardee: The George Washington University
Office of Sponsored Research
Rice Hall, 6th Floor
Washington, D.C. 20052
Project Officer: Penelope L. Pine
Division of Program Studies

Description: The purpose of this project is to explore the potential consequences of acquired immunodeficiency syndrome (AIDS) and human immunodeficiency virus (HIV)-related illness for the Medicaid and Medicare programs over the next decades. The study used the best currently available estimates of prevalence and cost per case and developed estimates of the portion of these costs that may be borne by the Medicaid and Medicare programs under alternative policy options that may be considered in future years. The project provided concept papers focused on the cost implications for the Medicaid and Medicare programs, estimating effects of alternative scenarios of the development of AIDS cases, treatment modes, and the distribution of sources of payment for the costs.

Status: This project has completed a comprehensive review of studies on the prevalence of AIDS, alternative treatment modes and their costs, and the methods and sources of the treatment costs. The following reports are

available from the National Technical Information Service:

- "The Economic Consequences of HIV Infection for the Medicaid and Medicare Programs: An Exploratory Study," accession number PB89-232706.
- "Private Insurance and the HIV Epidemic," accession number PB89-232722.
- "Service Needs of Persons with AIDS," accession number PB89-232698.
- "AIDS Cost Modeling: A Pragmatic Approach," accession number PB89-232680.
- "Telephone Survey of Blue Cross/Blue Shield, HMO's, Commercial Insurers and Employers," accession number PB89-232672.
- "The Implications of AIDS for the Future Financial Stability of the Medicare Program," accession number PB89-232714.
- "A Report on a Literature Search and Review of Selected Research on Human Immunodeficiency Virus (HIV) and Health Care Financing Issues Including Topical Bibliographies and a Consolidated Bibliography," accession number PB89-232664.
- "The Economic Consequences of HIV Infection for the Medicaid Program," accession number PB89-232730.

Also, the following articles have been published:

- National Center for Health Services Research and Health Care Technology Assessment: Modeling the impact of the AIDS/HIV epidemic on State Medicaid programs. *New Perspectives on HIV-Related Illness: Progress in Health Services Research.* Conference Proceedings. DHHS Pub. No. PHS89-3449. Public Health Service. Washington. U.S. Government Printing Office, September 1989.
- AIDS cost modeling in the U.S.: A pragmatic approach. *Health Policy* Vol. 11, No. 2, 1989.

Cost of Acquired Immunodeficiency Syndrome

Project No.: 99-C-98489/9-05
Period: May 1987-December 1988
Funding: $ 215,739
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center
(See page 77)
Task Leader: Penelope L. Pine
Division of Program Studies

Description: This project was aimed at improving the Nation's understanding of the costs generated by acquired immunodeficiency syndrome (AIDS) patients and the distribution of the resulting cost burden to various public and private payers. Essentially, the project had two parts:

- A feasibility test for recruiting and interviewing a panel of patient volunteers from the Los Angeles area regarding their treatment and financing source(s).
- An examination of State health, Medicaid, and health insurance regulation agencies concerned with current research studies and operating policies with respect to AIDS.

Status: This project has been completed and the following papers have been published:

- National Center for Health Services Research and Health Care Technology Assessment: The costs and financing of care for AIDS patients: Results of a cohort study in Los Angeles. *New Perspectives on HIV-Related Illness: Progress in Health Services Research.* Conference Proceedings. DHHS Pub. No. PHS89-3449. Public Health Service. Washington. U.S. Government Printing Office, September 1989.
- Pascal, A., Cvitanic, M., Bennett, C., Gorman, M., and Serrato, C.: State policies and the financing of acquired immunodeficiency syndrome care. *Health Care Financing Review.* Vol. 11, No. 1. HCFA Pub. No. 03286. Office of Research and Demonstrations, Health Care Financing Administration. Washington. U.S. Government Printing Office, Fall 1989.

Research on Acquired Immunodeficiency Syndrome Cost and Utilization Experience in New York and California Medicaid Programs

Project No.: 18-C-99242/9-01
Period: June 1988-December 1990
Funding: $ 392,625
Award: Cooperative Agreement
Awardee: SysteMetrics, Inc.
104 West Anapamu Street
Santa Barbara, Calif. 93101
Project Officer: Penelope L. Pine
Division of Program Studies

Description: The purpose of this project is to:

- Use epidemiological techniques to produce incidence analysis of acquired immunodeficiency syndrome (AIDS) during a 4½-year time period (October 1982 to March 1987).
- Study the eligibility patterns of AIDS patients in Medicaid.
- Develop a disease-staging algorithm for AIDS Medicaid patients.
- Provide a utilization and cost analysis of the population.

Status: The first year of this project has been devoted to efforts concentrated on the following methodological activities:

- Developing common definitions for key variables, including the particularly difficult AIDS case definition.
- Constructing data files for research.
- Refining the disease-staging algorithm for AIDS.

Preliminary findings from the longitudinal study of Medicaid eligibility patterns were presented at the 1989 Annual Meeting of the American Public Health Association.

Medicaid Home and Community-Based Waiver Programs for Acquired Immunodeficiency Syndrome Patients

Project No.: 99-C-98489/9-06
Period: August 1988-July 1990
Funding: $ 52,679
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center (See page 77)
Task Leader: Penelope L. Pine
Division of Program Studies

Description: The purpose of this project is to develop a background paper that identifies major research questions for an evaluation of the utilization and expenditure patterns of acquired immunodeficiency syndrome (AIDS) patients in State Medicaid home and community-based waiver programs. The study will identify appropriate data sources, review available literature on State waiver programs, and identify major research questions that should be addressed. The project team will explore the reasons States with large AIDS patient populations have not sought Medicaid home and community-based waivers.

Status: The project team has reviewed current Medicaid AIDS waivers in the State of California, Hawaii, New Jersey, New Mexico, Ohio, and South Carolina. Contacts have been made with other States considering using the waiver program. The final report is near completion.

The Effects of the Human Immunodeficiency Virus Epidemic on the Uses of Medicaid by Women and Children

Project No.: 99-C-98489/9-06
Period: August 1989-July 1990
Funding: $ 155,096
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center (See page 77)
Task Leader: Penelope L. Pine
Division of Program Studies

Description: This study will determine the changes in State Medicaid programs that have resulted from the spread of the epidemic of human immunodeficiency virus (HIV)-related diseases. An analysis of the effects of the acquired immunodeficiency syndrome (AIDS) epidemic on Medicaid expenditures, services, and funding for other Medicaid eligibles will be performed. In particular, the study will review State AIDS programs to examine Medicaid use by women and children.

Status: This project is in the early developmental stage.

Mental Health Studies

Project No.: 99-C-98489/9-06
Period: September 1986-July 1990
Funding: $ 222,062
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center (See page 77)
Task Leader: Michael J. Baier
Office of Operations Support

Description: This project consists of a series of mental health studies. The studies involve:

- The analysis of the effects of fee-for-service plans on the mental health status of adults and children.
- The effects of health maintenance organization versus fee-for-service plans on mental health outcomes.
- The effect of mental dimensions on the use of medical services.
- The health status and use of services by persons who are uninsured relative to those with Medicare, Medicaid, and private insurance.

Funding for this project has been provided by the National Institute of Mental Health.

Status: The following working drafts and RAND Note have been produced under this project and are available from RAND:

- "The Effects of Psychological Distress and Psychological Well-Being on Use of Medical Services" (WD-3865-1-NIMH/HCFA).
- "How Do HMOs Reduce Mental Health Costs?" (WD-4501-NIMH/HCFA).
- "Mental Health Needs of the Uninsured" (WD-4502-NIMH/HCFA).
- "Rehospitalization of the Seriously Mentally Ill in Mississippi: Conceptual Models, Study Design, and Implementation" (N-2996-RWJ/NIMH/HCFA).

Activities of Daily Living Measurements as Determinants of Eligibility

Project No.: 99-C-98526/1-06
Period: August 1989-May 1990
Funding: $ 99,991
Award: Cooperative Agreement
Awardee: Brandeis University Research Center (See page 78)
Task Leader: Dana B. Burley
Division of Long-Term Care Experimentation

Description: The study will use data from the National Long-Term Care Surveys, National Long-Term Care Channeling Demonstration, and the Social Health Maintenance Organization Demonstrations comprehensive assessment form to examine issues associated with defining and measuring activities of daily living (ADLs) for use as eligibility criteria for Medicare services. A cost analysis will be performed and other issues associated with using ADL scores as eligibility criteria will be discussed.

Among the questions to be addressed are:

- What level of ADL impairments is used to trigger eligibility?

- Which ADL items should be used?
- Under what circumstances should assessments be performed, and by whom?

Status: The study is in the early developmental stage.

Long-Term Care Supply and Medicare Hospital Utilization

Project No.: 17-C-99442/1-01
Period: August 1989-March 1990
Funding: $ 47,986
Award: Cooperative Agreement
Awardee: Abt Associates, Inc.
55 Wheeler Street
Cambridge, Mass. 02138
Project Officer: Nancy A. Miller
Division of Long-Term Care Experimentation

Description: The purpose of this project is to investigate how local variations in the availability of nursing home beds affect Medicare rates of hospitalization. Effects on the number of admissions, the number of hospital readmissions, the number of hospital days used, and the costs per Medicare Part A enrollee are to be evaluated. Urban and rural differences will be assessed. The impact of community long-term care services, Medicare risk-contract health maintenance organization services, and the prospective payment system on Medicare Part A utilization are to be evaluated.

Status: The study is in the early developmental stage.

Urban/Rural Variation in Home Health Agency and Nursing Home Services

Project No.: 99-C-98526/1-06
Period: September 1989-August 1990
Funding: $ 155,096
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: Terry Moore
Division of Long-Term Care Experimentation

Description: Brandeis University and the Urban Institute will compare urban and rural home health services and nursing home services to determine variation between provider characteristics and service utilization patterns. The underlying cost structures of urban and rural home health agencies will be studied as well. This study is national in scope and will utilize several Medicare data bases for analysis.

Status: This project is in the early developmental stage.

Analysis of Cost, Patient Characteristics, Access, and Service Use in Urban/Rural Home Health Agencies

Project No.: 99-C-99169/5-02
Period: September 1989-August 1990
Funding: $ 103,420
Award: Cooperative Agreement
Awardee: University of Minnesota Research Center
(See page 79)
Task Leader: Terry Moore
Division of Long-Term Care Experimentation

Description: The purpose of this project is to study urban and rural differences in home health agency costs, patient characteristics, access to care, and service utilization patterns. The study will include two types of analyses:

- Costs, patient characteristics, and service utilization patterns will be analyzed using home health care data from the State of Wisconsin.
- Access to home health care services will be examined with the use of patient-level Medicare data. Mathematica Policy Research, Inc., as subcontractor for the project, will apply two of the "Aftercare Guidelines" to the Medicare plan of treatment data to develop a measure of access between urban and rural recipients of home health care.

Status: This project is in the early developmental stage.

Case-Management Studies

Case-Managed Medical Care for Nursing Home Patients

Project No.: 95-P-98346/1-06
Period: July 1983-July 1989
Award: Grant
Grantee: Massachusetts Department of Public Welfare
180 Tremont Street
Boston, Mass. 02111
Project Officer: Dana B. Burley
Division of Long-Term Care Experimentation

Description: The Health Care Financing Administration (HCFA) granted Medicare and Medicaid waivers to the Massachusetts Department of Public Welfare to permit fee-for-service reimbursement for the provision of medical services by physician-supervised nurse practitioners and physician assistants (NP/PA) for residents of nursing homes. This permits increased medical monitoring that is expected to generate cost savings as a result of fewer hospital admissions and outpatient visits. Providers are responsible for managing and monitoring the health care and medical condition of all enrollees to assure that the primary care needs of nursing home patients are met in a timely fashion, often without resorting to the hospital emergency room. Initial physical exams, medical evaluation, and re-evaluations are being performed by the NP/PA in the nursing home. The NP/PA operates under written protocols that describe the common medical problems to be encountered and appropriate evaluation and treatment procedures. The supervising physician reviews and countersigns the NP/PA's evaluation and prescriptions. The physician is also consulted in any unusual situation or emergency.

Status: The RAND Corporation, as part of the Research Center Cooperative Agreement with the Health Care Financing Administration, has completed an evaluation of this project's impact on the use and cost of nursing home and hospital services. This evaluation relies primarily on Medicare and Medicaid claims data. The Pew Foundation awarded a grant to the University of Minnesota to assess the project's impact on quality of care. Section 9413 of Public Law 99-509, the Omnibus Budget Reconciliation Act of 1986, mandated the continuation of this project through July 1989. Currently, the project is in its phase-down period and is expected to end March 31, 1990. The evaluation report is completed and available through RAND (R-3822-HCFA).

Evaluation of Massachusetts Case-Managed Medical Care for Nursing Home Patients

Project No.: 99-C-98489/9-05
Period: April 1985-May 1989
Funding: $ 393,513
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center
(See page 77)
Task Leader: Tony F. Hausner
Division of Long-Term Care Experimentation

Description: The Health Care Financing Administration granted Medicare and Medicaid waivers to the Massachusetts Department of Public Welfare to permit fee-for-service reimbursement for the provision of medical services by physician-supervised nurse practitioners and physician assistants for 6,500 residents of nursing homes. The project will permit increased medical monitoring that is expected to generate cost savings as a result of fewer hospital admissions and hospital outpatient visits. This evaluation will focus on the impact of the project on the use of nursing home services and hospital emergency room and outpatient services. The University of Minnesota is conducting a related evaluation on the impact of the project on quality of care.

Status: RAND and Minnesota retrospectively collected data for the study period March 1986 to March 1987. A draft final report, "Results from the Evaluation of the Massachusetts Nursing Home Connection Program" (WD-4462-HCFA/PCT), was submitted to the Health Care Financing Administration in June 1989. The final version will be available from RAND (R-3822-HCFA/PCT) by early 1990. The study found improvements in the quality of care and reductions in hospital costs for some patients.

Report on Costs of Case Management

Project No.: 99-C-99169/5-01
Period: August 1988-May 1989
Funding: $ 33,061
Award: Cooperative Agreement
Awardee: University of Minnesota Research Center
(See page 79)
Task Leader: Margaret A. Coopey
Division of Long-Term Care Experimentation

Description: Under this project, a report on case management and its costs was prepared. The report reviews case management models and data collected by 51 case management programs. Four dimensions of case management were used to construct the case management models:

- The nature of services provided.
- Goals of the case management program.
- The reimbursement mechanism.
- Specific operational constraints.

Using these dimensions, five empirical models of case management were identified: fee-for-service; private insurance; capitated/consolidated; public-funded with purchase authority; and broker. Data on case management costs and cost determinants are presented. Also, a theoretical model relating program incentives and outcomes was developed and the limitation of the data for estimating this model is discussed.

Status: A final report, "Case Management Costs: Conceptual Models and Program Descriptions," is available from the National Technical Information Service, accession number PB90-159369.

Catastrophic Coverage Studies

Cohort Analysis of Disabled Elderly

Project No.: 99-C-98526/1-06
Period: August 1988-July 1990
Funding: $ 89,986
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: Judith A. Sangl
Division of Long-Term Care Experimentation

Description: The project applies event history analyses to nationally representative data sources to derive estimates of the transitions between various health status categories and the duration within categories for different age groups. These data sources include: multiple years of National Health Interview Surveys, mortality records, National Long-Term Care Surveys, Longitudinal Study on Aging, and the National Nursing Home Surveys. Researchers assigned to the project will also estimate, based on the type and level of severity of morbidity and disability categories, the risks involved and the duration of specific types of acute and long-term care.

Status: Many of the key data sets have been formatted for analysis and initial analyses have been conducted. The final analyses are expected to be completed by early 1990.

Study of Alternative Out-of-Home Services for Respite Care

Project No.: 99-C-98526/1-06
Period: September 1988-February 1990
Funding: $ 239,495
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: Dana B. Burley
Division of Long-Term Care Experimentation

Description: This study will examine the advisability of expanding the respite care benefit to cover out-of-home services such as those provided in a nursing home or an adult day care center as an alternative to in-home respite care. Brandeis University researchers will assess the advisability of broadening the respite care benefit to include alternative services, giving consideration to cost, access, quality of care, and the feasibility of implementation. This will be accomplished using information collected from existing data sets and from ongoing respite programs and demonstrations. This project is congressionally mandated under Section 205(g) of the Medicare Catastrophic Coverage Act of 1988 (Public Law 100-360).

Status: The final report has been received and will be used as a basis for the mandated Report to Congress. The recommendation made, based on this report, is to evaluate the experience of offering the respite benefit as an in-home-only benefit, as currently legislated, before expanding to out-of-home services.

Long-Term Care Studies (Section 207)

Project No.: 500-89-0047
Period: September 1989-September 1994
Funding: $ 3,790,234
Award: Contract
Contractor: Health and Sciences Research Incorporated
9300 Lee Highway
Fairfax, Va. 22031
Project Officer: Marvin A. Feuerberg
Division of Long-Term Care Experimentation

Description: This project, mandated under Public Law 100-360, the Medicare Catastrophic Coverage Act of 1988, will conduct research related to the delivery and financing of long-term care services for Medicare beneficiaries. The project will focus on four major areas:

- The financial characteristics of Medicare beneficiaries who receive or need long-term care services.
- How the characteristics of Medicare beneficiaries affect their utilization of institutional and noninstitutional long-term care services.
- How relatives of Medicare beneficiaries are affected financially and in other ways when beneficiaries require or receive long-term care services.
- How the provision of long-term care services may reduce expenditures for acute care health services.

Analyses will use existing long-term care and other survey data bases, such as the National Long-Term Care Surveys, the Longitudinal Study of Aging, the National Nursing Home Survey, the Survey of Income and Program Participation, and the National Medical Care Expenditure Survey. Medicare administrative records and other extant information will also be utilized. Three Reports to Congress are required under the contract.

Status: This project is in the early developmental phase.

Other Studies

Can Geriatric Nurse Practitioners Improve Nursing Home Care?

Project No.: 18-C-98379/9-03
Period: September 1983-December 1988
Funding: $ 673,759
Award: Cooperative Agreement
Awardee: The RAND Corporation
1700 Main Street
Santa Monica, Calif. 90406
Project Officer: Judith A. Sangl
Division of Reimbursement and Economic Studies

Description: The purpose of the study was to evaluate the potential of the use of geriatric nurse practitioners (GNPs) for improving outcomes of care and containing costs in skilled nursing facilities. The 30 nursing homes that participated in the Mountain States Health Corporation's (MSHC) GNP demonstration project were compared with 30 nursing homes in the region that did not participate. Comparisons were made of:

- Patient outcomes.
- Process of care.
- Nursing home costs.
- History of certification deficiencies.

Homes were matched by State, ownership, bed size, and urban, suburban, or rural location.

Status: Study findings indicate that the MSHC's GNP program has had a limited positive effect. If the employment market for nurses remains unchanged, the program would be relatively inexpensive to implement, especially in larger facilities. The program did not adversely affect nursing home per diem costs or profits. Further, it appears that GNPs decreased hospital use for patients newly admitted to nursing homes.

The following publications are available:

- The Financial Impact of Nursing Home-Based Geriatric Nurse Practitioners: An Evaluation of the Mountain States Health Corporation GNP Project. Report No. R-3694-HCFA/RWJ. Santa Monica, Calif.: The RAND Corporation, May 1989.

- Geriatric nurse practitioners as nursing home employees: Implementing the role. *Gerontologist*, Vol. 28, No. 4, August 1988.
- Effects of a geriatric nurse practitioner on process and outcome of nursing home care. *American Journal of Public Health*, Vol. 79, No. 9, September 1989.

Efficacy of Nursing Home Preadmission Screening

Project No.: 18-C-99213/1-01
Period: June 1988-September 1990
Funding: $ 376,698
Award: Cooperative Agreement
Awardee: Brown University
Division of Biology and Medicine
Providence, R.I. 02912
Project Officer: Phyllis A. Nagy
Division of Long-Term Care Experimentation

Description: In recent years, more than 30 States have adopted some form of preadmission screening, although the scope and methodology of programs vary considerably. The purpose of this project is to evaluate a nursing home preadmission screening methodology developed by Brown University for the State of Connecticut. This screen is designed to identify those persons who would be institutionalized if community-based services (under the State's Section 2176 Medicaid waiver program) were not available. The project will analyze the extent to which the screen accurately predicts the need for a nursing home level of care or an equivalent level of community care. It is anticipated that this study will refine Connecticut's screening instrument, thereby helping to determine the most cost-effective long-term care placement for each client. The study also will investigate the predictive validity of several other States' preadmission screening methodologies. A summary of findings, along with a synthesis of other States' efforts, will determine whether preadmission screening programs can successfully identify at-risk individuals and should provide guidance to the Health Care Financing Administration in identifying the most effective approaches.

Status: The cooperative agreement was awarded in July 1988. A project start date of September 1, 1988, was approved to provide the awardee with adequate time to hire appropriate staff. The predictive validity of Connecticut's preadmission screen (PAS) decision rules has been preliminarily assessed by applying them to each of three data sets, as well (a "synthetic" data set); these data sets include the South Carolina Community Long-Term Care Demonstration, the Georgia Alternative Health Services Project, and the National Long-Term Care Channeling Demonstration. During the second year of the project, screening and assessment outcome data for a 6-month cohort of Connecticut Community-Based Services program applicants will be reviewed. Subsequent analyses of these data will have a significant impact on the planned revision of Connecticut's screen.

Financial Impact to Beneficiaries of Nursing Home Care

Project No.: 99-C-98526/1-06
Period: August 1988-February 1990
Funding: $ 129,888
Award: Cooperative Agreement
Awardee: Brandeis University Research Center
(See page 78)
Task Leader: Judith A. Sangl
Division of Reimbursement and Economic Studies

Description: The project will use The Urban Institute's Transfer Income Model (TRIM)-2 for State estimates and the Connecticut Nursing Home Inventory data base to calculate nursing home use and payments. The TRIM-2 model is a microsimulation model, based on the 1984 Current Population Survey, used in forecasting use and payments. The Connecticut Inventory data base contains patient-specific information on all nursing home patients (private and public) from 1977 to the present. In addition, the 1985 National Nursing Home Survey will be used to analyze several dimensions of nursing home use. From the collected data, estimates will also be made for the nursing home patients' spend-down provision.

Status: A draft report, "Changes in Duration and Outcomes of Nursing Home Stays: 1977-1985," was completed. The report concludes that changes have occurred in the overall composition of nursing home admissions from 1977 through 1985. The analysis indicates that the nursing home patients had become older, more disabled, and more likely to have been admitted for terminal care. During the coming year, Brandeis will complete:

- Development and analysis of a synthetic cohort of nursing home admissions with data from the Connecticut Nursing Home Inventory.
- Estimation of spend-down rates and the numbers of persons at the State level through the use of the TRIM model.

Goals and Strategies for Financing Long-Term Care

Project No.: 99-C-99169/5-02
Period: August 1989-March 1990
Funding: $ 95,409
Award: Cooperative Agreement
Awardee: University of Minnesota Research Center
(See page 79)
Task Leader: Nancy A. Miller
Division of Long-Term Care Experimentation

Description: The purpose of this project is to use concepts drawn from a number of disciplines—economics, decision sciences, policy analysis, sociology, and demography—to develop statements of possible objectives for long-term care insurance. Defining

objectives will include an analysis of benefits and costs from potential changes in financing and an analysis of expected behavioral changes in response to changes in financing. The meaning of these objectives will then be illustrated by applying them to several types of policy proposals:

- Subsidization of private insurance.
- Employer-provided insurance.
- "Whole-life" versions of insurance.
- Means-tested public insurance.
- "Medicaid-equivalent" subsidies.
- "Catastrophic" public insurance.
- Public provision of information on Medicare coverage and the need for insurance.

Status: The study is in the early developmental stage.

Prior and Concurrent Authorization Demonstrations

Project No.: 500-87-0029
Period: September 1987-July 1992
Funding: $ 598,000
Award: Technical Support: Evaluation of Demonstrations
(See page 80)
Contractor: Lewin/ICF
1090 Vermont Ave.
Washington, D.C. 20005
Task Leader: Tony F. Hausner
Division of Long-Term Care Experimentation

Description: Section 9305 of the Omnibus Budget Reconciliation Act of 1986 (Public Law 99-509) required the Secretary of Health and Human Services to conduct a demonstration program concerning prior and concurrent authorization for post-hospital extended care services and home health services furnished under Part A or Part B of Title XVIII. This legislation responds to concerns expressed by home health agencies (HHAs) and skilled nursing facilities (SNFs) that under the current system of Medicare payment they cannot adequately predict what services the fiscal intermediaries (FIs) will deny as noncovered. In recent years, there has been a steady increase in the number of visits denied by FIs. It is hypothesized that prior authorization (PA) and concurrent authorization (CA) payment approaches will reduce the number of services denied without increasing Medicare expenditures. Under PA, providers submit treatment plans to FIs for review prior to the start of care; under CA, plans of treatment are submitted when care begins. In both approaches, the provider receives notification from the FI about how many services will be covered. This provides greater certainty about coverage and payment before services are given. The law required that the demonstration include at least four projects and be initiated by January 1, 1987, and that the Secretary must evaluate the demonstration and report to Congress on the evaluation. The evaluation and report must address:

- The administrative and program cost for prior and concurrent authorization compared with the current system of retroactive claims review.
- The impact on access and availability of post-hospital services and timeliness of hospital discharges.
- The accuracy and cost savings of payment determinations and rates of claims denials compared with the current system.

The Bureau of Program Operations, Health Care Financing Administration, implemented a home health concurrent authorization pilot project in July 1987. This project was initiated in the State of Illinois and the entire Dallas Region and is still ongoing. Lewin/ICF is responsible for evaluating the pilot project and implementing and evaluating the SNF demonstration.

Status: Lewin/ICF has submitted a report that describes the evaluation of the home health project and the design of the SNF project. The Department has prepared a draft Report to Congress based on Lewin/ICF's report. The SNF prior authorization demonstration was implemented in September 1989 at sites in Tennessee and Indiana.

Changes in the Post-Hospital Care Utilization Among Medicare Patients

Project No.: 99-C-98489/9-06
Period: August 1989-July 1990
Funding: $ 102,247
Award: Cooperative Agreement
Awardee: The RAND Policy Research Center
(See page 77)
Task Leader: Marni J. Hall
Division of Long-Term Care Experimentation

Description: In this project, a data file will be created linking Medicare billing records for inpatient hospital and post-hospital care for 1987 and 1988. RAND will use this file to document changes in post-hospital utilization among Medicare patients. The analyses will include an examination of skilled nursing facility, home health agency, and rehabilitative hospital care.

Status: This study is in the early developmental stage.

Evaluation of National Rural Swing-Bed Program

Project No.: 500-83-0051
Period: September 1983-November 1987
Funding: $ 1,181,478
Award: Contract
Contractor: Center for Health Services Research
University of Colorado
Health Sciences Center
1355 South Colorado Boulevard
Denver, Colo. 80222
Project Officer: Herbert A. Silverman
Division of Program Studies

Description: This project was congressionally mandated by the Omnibus Budget Reconciliation Act of 1980 (Public Law 96-499). The legislation permits hospitals with fewer than 50 beds that are located in rural areas with a shortage of long-term care beds to "swing" their beds between acute and long-term care as needed. The evaluation assessed the impact on:

- Access to long-term care beds in rural areas.
- Quality of long-term care in hospitals.
- Cost of service in swing-bed hospitals.
- Program-wide costs.
- Administrative costs to administer and monitor the program.

Based on the findings and recommendations, Congress would decide whether to continue the program or extend it to larger hospitals. The Medicare prospective payment system (PPS) for hospitals was instituted for hospital fiscal years beginning on or after October 1, 1983. It is perceived that PPS has had an effect on hospital lengths of stay and on the condition of patients at the time of discharge. This could have a significant impact on the use of swing beds. The scope of work for this contract was expanded in 1985 to assess the impact of PPS on the swing-bed program.

Status: The Report to Congress was delivered in February 1988. The Health Care Financing Administration (HCFA) recommended the continuation of the rural swing-bed program and retention of the current method of paying for long-term care services in the swing bed, but recommended against the extension of the swing-bed option to urban hospitals at this time. A summary article "Evaluation of the national swing-bed program in rural hospitals" was published in the *Health Care Financing Review*, Vol. 10, No. 1, Fall 1988. In the Omnibus Budget Reconciliation Act of 1987 (Public Law 100-203), Congress extended the swing-bed option to rural hospitals with fewer than 100 beds. The findings concerning the impact of PPS on the swing-bed program have been delivered and will be incorporated into the Annual Report to Congress on the *Impact of the Medicare Hospital Prospective Payment System*. The evaluation contract was again modified in 1988 to develop another mandated congressional report on the extent, reasons, and impact of the peer review organization (PRO) denials of admissions to swing-bed hospitals for extended care services. Recommendations for methods of encouraging eligible hospitals to elect the swing-bed option were to be included in the report. The latter report, entitled *Review of Swing-Bed Care by Peer Review Organizations*, was delivered to Congress in May 1989. The study showed that during the period from July 1986 through March 1988, the PRO denial rate for swing-bed care was slightly less than 5 percent on a national basis. In individual HCFA regions, the denial rates ranged from 0 to 6 percent. Improved understanding of review procedures and coverage criteria on the part of swing-bed hospitals and the issuance of new skilled nursing facility (SNF) guidelines by HCFA in early 1988 appeared to reduce the problems with swing-bed denials experienced prior to 1988. The Department recommended against any further legislative changes to the swing-bed program. It was believed that extension of the swing-bed option to rural hospitals with fewer than 100 beds and the expanded SNF benefits contemplated under the Medicare Catastrophic Coverage Act of 1988 (Public Law 100-360) together with the new guidelines for SNF coverage would make the swing-bed option more attractive to eligible hospitals and increase the number electing to participate.

List of Congressionally Mandated Studies

Quality of Care

Physician and Ambulatory Care Payment Systems

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Program Efficiencies, Analyses, and Refinements

Health Care Prevention and Access

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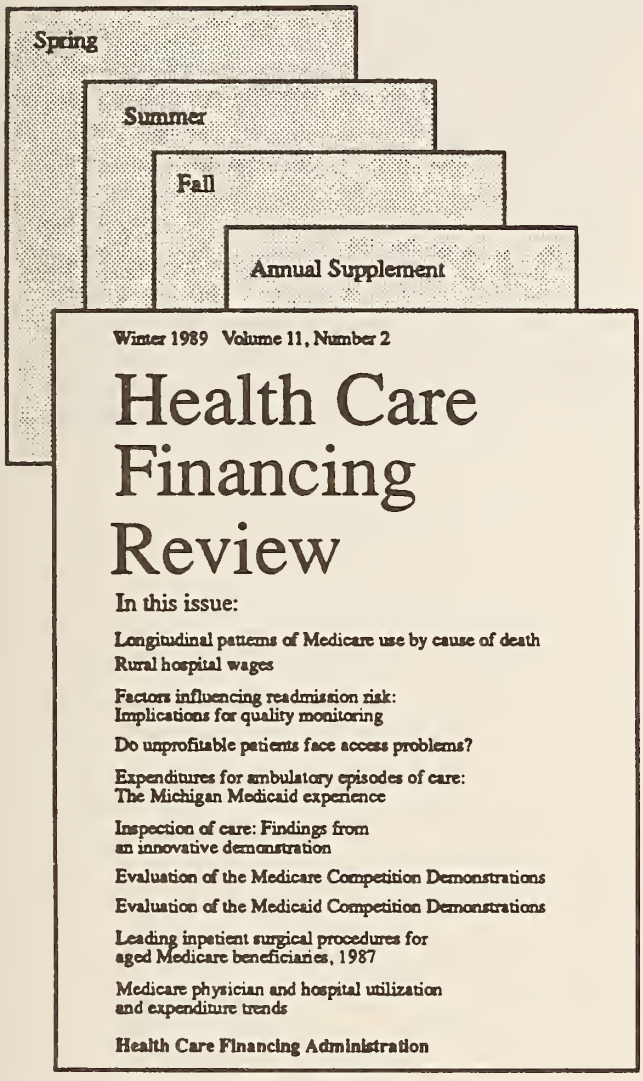

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A few final reports are published by the Health Care Financing Administration. These reports are available for sale from the U.S. Government Printing Office (GPO). Reports must be ordered by title and stock number directly from GPO. For those projects with published final reports, ordering information is given in the project write-up. Send check or money order for the price listed and make payable to: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

In addition, results from intramural and extramural research projects and demonstrations are often featured in the *Health Care Financing Review*, the Agency's quarterly journal. The journal also offers synopses on newly awarded research and demontration projects being funded by the Health Care Financing Administration. The *Review* is available on a subscription basis from the Superintendent of Documents for $13.00 ($16.25 foreign). Subscribers receive four quarterly issues and one annual single-theme supplement per year.

U.S. Department of
Health and Human Services
Health Care Financing Administration
1-A-9 Oak Meadows Building
6325 Security Boulevard
Baltimore, Maryland 21207

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